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HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

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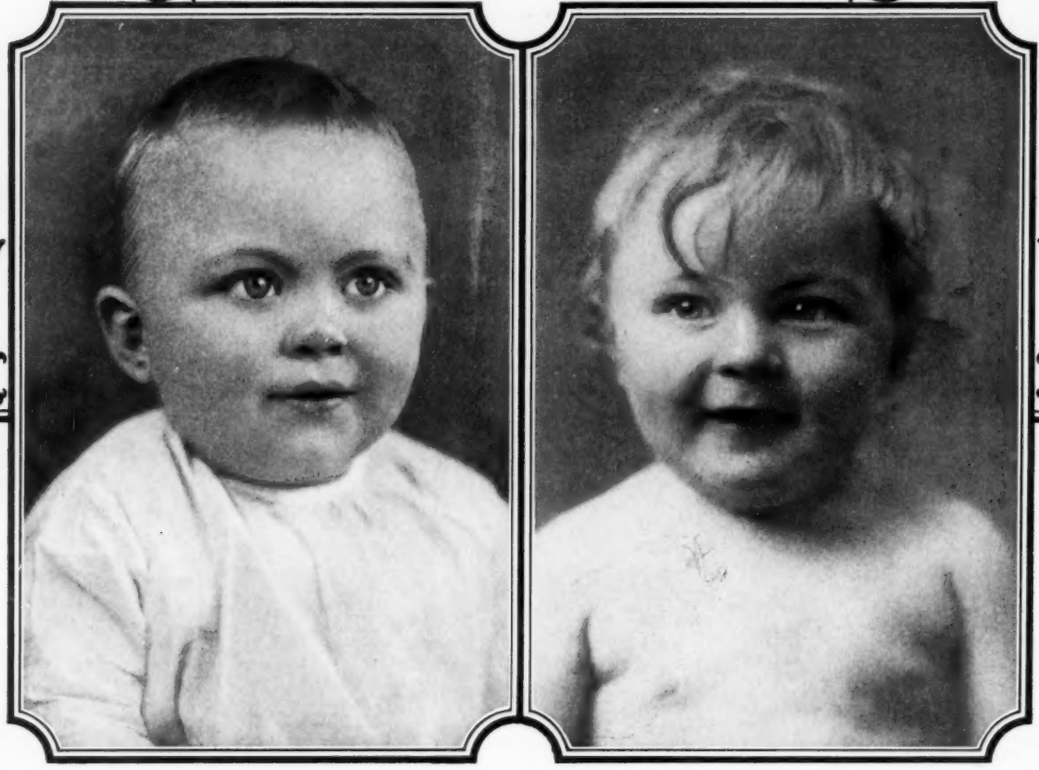

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HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association
535 North Dearborn Street, Chicago

VOLUME 3 — AUGUST, 1925 — NUMBER 8

WHO'S WHO IN THIS ISSUE

DR. LYDIA ALLEN DEVILBISS, a professor of public health administration at an eastern medical college and a popular lecturer on health topics, writes of her own experiences in dieting to reduce. DR. PARK J. WHITE, specializes in the treatment of children's disorders. DR. RALPH H. MAJOR is a member of the teaching staff of a middle western medical school. DR. ARTHUR J. CRAMP directs the bureau of investigation of the American Medical Association.

DR. C. C. BASS, who writes interestingly on malaria, is connected with the school of medicine of a southern university. DR. FREDERICK BOGUE NOYES is a dental authority, who gives particular attention to children's teeth. EMILY FERRIS is connected with the bureau of child welfare of the University of Kansas.

DR. A. J. ORENSTEIN, C.M.G., M.R.C.S., superintends sanitation for Rands Mines, Ltd., at Johannesburg, South Africa. DR. MAZYCK P. RAVENEL teaches bacteriology and preventive medicine at a middle western university and is widely known as a sanitarian. HETTY LOVEJOY SORDEN is associated with the American Child Health Association.

DR. FLOYD TROUTMAN ROMBERGER has made a long study of anesthesia and is himself an anesthetist. DR. JULIUS FRIEDENWALD enjoys a wide reputation for his work on cancer. LOUISE F. SHIELDS is interested in the Oregon plan of forestalling disease, delinquency and dependence among migratory workers. PROF. LOUIS GERSHENFELD is connected with the bacteriology and hygiene department of the Philadelphia College of Pharmacy.

DR. RICHARD E. STIFEL and DR. E. LEVIS PRIZER both are frequent contributors to HYGEIA, Dr. Stifel being interested in the history of medicine and Dr. Prizer in the chronic invalid. DR. MANTON M. CARRICK has been for some time associated with the Texas state board of health at Dallas. DR. ABRAHAM ZINGHER is assistant director of the bureau of laboratories of the New York City department of health.

In the September Issue:

PREVENTING CRIME. *By Dr. Herman Adler. The use of mental and physical examinations in preventing crime will be discussed by Dr. Adler in the first of a series of articles on this timely subject prepared for Hygeia by prominent neurologists and psychologists.*

CARE OF THE SCHOOL CHILD'S HEALTH. *By Dr. Thomas D. Wood. This well known authority has written a series of four practical articles on maintaining child health, the first of which will appear next month.*

HOW I USE HYGEIA IN MY CLASS WORK. *By Grade, High School and College Teachers. The prize letter contest among teachers closed July 20 and some exceptionally helpful suggestions to teachers are contained in the letters. The prize-winning essays will be published in the September and October issues.*

Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

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Underwood & Underwood

Fishin'

Jest fishin'! Yep—don't care a rap
'Bout ketchin' any;
Been restin' a while—had a nap
An' drempt so many

Dif'runt kind o' dreams
(An' it wa'n't mor'n a minit
I dropt off)—but seems
Like those apple blossoms

Droppin' on my face
Took me back to years ago!
I c'd see the very same place
We boys went swimmin' down below

The gris'-mill (bull-pout's there, y'know);
Funny! how dreams work so fast
'Bout times, seems went so slow;
Times so far off—back in the past.

—CONSTANCE FASSETT WILBUR.

(From "Fisherman's Verse" chosen by William Haynes and Joseph L. Harrison.)

I Reduce

LYDIA ALLEN DEVILBISS

"GEORGE HENRY," I remonstrated, waving aside a tempting dessert, "I am telling you that I am getting too fat and that I am going to reduce."

"What do you want to do that for?" using that injured tone of voice which husbands affect when they are displeased.

"I am too heavy for good looks and besides—"

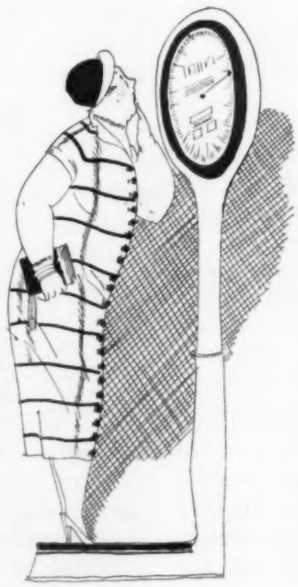
"You look good enough to me. I like you best just as you are." The emphasis was all on the I.

Conversations almost identical with that had been coming up at our home regularly. Every few days we would have an argument that always began and always ended the same way. George Henry grew impatient because he could not convince me that I was all right just as I was. I sometimes grew angry because I could not get him to admit that I ought to reduce.

I had always wanted to reduce, but George Henry made fun of my diets and exercises. He objected strenuously to having the meals for the family—meaning himself—curtailed in any way, although it wouldn't have hurt him for he was somewhat overweight himself. But he ragged me so, in the manner of a small boy teasing his sister, that although I had started in several times to diet I just had to give it up. It takes about all the grit a person has, even when the family is sympathetic and encouraging.

One day when I had given George Henry the worst of the argument by quoting vital statistics on the merits of the underweights when it comes to long life and good health, he reluctantly admitted: "Well, I guess maybe you ought not to weigh any more."

That settled the matter with me so far as George Henry was concerned. I had been saying the same thing to myself for the last ten years. Yet in spite of the fact that I had gone in for periods of fasting, dieting, turkish baths and various forms of physical exercises, I had steadily added to my weight at the rate of 5 lbs. a year, the result being that I was now nine years ahead of the game and about 45 lbs. overweight less than 15 lbs. a month.



Life insurance doctors allow a woman to weigh 2 lbs. for every inch she is tall. As she grows older she is permitted to add some pounds with her added dignity, but not too much. She is not to weigh more than 2¼ lbs for each inch of height when she has reached the mature age of 50 or thereabout. Any further gain puts her in the dangerous overweight class. According to life insurance tables, 10 per cent. overweight cuts off about the same proportion from life expectancy.

Not only does overweight cut down the expectancy of life, but in my case it was cutting down the livableness of life as well. Here I was, passably fair, fat and forty, with a loving husband and about everything that a woman could wish. Still I was not happy. The overweight slowed up my movements and made me feel large and clumsy. The extra fat was putting a burden on the heart which was noticeable when I tried to go upstairs.

I was tired trying to look stylish. I felt old and ugly. I got so I even hated to look at my reflection in the glass. When a woman hates to look in her mirror, romance is dead. What woman can look romantic when she tips the scales at nearly 200 lbs.!

As if these troubles were not enough, my extra heavy weight was causing me to develop arch difficulties, beginning flat feet. I had to wear orthopedic shoes, which looked quite as bad as the name sounds. Romance was dead.

Spurred to action by what my mirror told me, I began to count the cost of reducing. I found that apart from the right sort of diet and exercises the greatest items involved were time and service. I had neither.

But that was not precisely correct. I found that I had exactly the same amount of time that any other human being enjoys: 24 hours a day, 7 days a week, 365 days a year. One fourth of that year or 90 days was the time I calculated it would take to bring myself down to normal weight, reducing at the rate of not less than fifteen pounds a month.

I looked at my figure in the glass and tried to visualize what it would be without the 45 lbs. The mirror won. My precious days were to be spent getting rid of the fat.

Some persons start to reduce by trying to live on orange juice, three pints of buttermilk a day, or some other faddish diet in which something which is necessary for health is lacking. They may not notice the results at the time, but years afterward their heart muscles, or other internal structures, are likely to show the result of running the engine without proper fuel and lubrication. The result of this so-called fasting and unscientific diet is apt to be that the person loses weight, but he is also inclined to sickness of one kind or another. I intended not only to reduce but I intended to get well. I expected to regain not only my youthful figure, but my youthful pep and vitality as well.

The Diet Is Prescribed

The first thing I did was to consult a specialist in disorders of metabolism, as chronic overweight is called in medical textbooks. The specialist I consulted took the whole responsibility for the reduction. I was just to forget that I had a brain in my head. My entire responsibility was limited to stoking three times a day with the meager but rather satisfying stoke that was set before me, and the adoption of a policy of hands off everything else that was meant to be eaten.

For this stoking is the whole bag of tricks in the game of reducing. It is the cure. Without it there is no getting back to the youthful figure which the heart craves. The only joker in it is that not all stoking is alike; it has to be right for each particular case.

There is nothing mysterious or seriously complicated about a diet. Any well equipped physician can figure one out, or a dietitian can prepare the diet lists under the doctor's direction. The doctor is necessary, however, for getting thin is only a part of the game of reducing. The whole game is to get well.

I was put on a diet of 600 calories a day—the amount which the average persons eats for breakfast. This 600 calories was to be divided into 55 grams protein, which is the least amount of protein any adult should consume daily in order to protect the heart muscle. I was allowed also 25 grams of fat and 20 of carbohydrate. Multiplying the 55 protein and the 20 carbohydrate by 4, and the 25 fat by 9 gives the total of 600 calories for the day.

This is about the lowest diet that is prescribed for reducing, short of periods of fasting. On this diet I was somewhat weakened, but I wasn't especially hungry. In fact, I was not as hungry as I usually was when I ate three regular meals, and not nearly as hungry as when I ate too much. Habitual overeating is the one surest way to suffer from ravenous hunger.

After the diet the rest was mostly fun and thrills.

The movements of the athlete and the dancer are graceful because they are done almost without conscious effort. Putting more effort into a movement than is required makes for clumsiness and awkwardness. After an overweight person has carried the burden of excessive flesh for a number of years it requires a process of physical reeducation in the use of his muscles to enable him to regain some of the suppleness and the unconscious grace of youth.

In reducing, any and all exercises not forbidden for good reasons by the physician are good. Exercises are like castor oil; it is all in the taking.

The rolling exercise is one that is associated with reducing. I had always declared that when I adopted it I would charge admission. I had visions of a wild sort of roll, something like rolling down hill or going over Niagara in a barrel. But it is not anything so exciting.

In the rolling exercise for reducing one merely lies flat on the carpet, hooks the feet together and rolls from side to side. This exercise is calculated to take off flesh where it is most visible in the flapper who is doing what she thinks is an imitation vamp walk. But rolling did more to me than was intended. I had a black and blue feeling until I finally abandoned it.

Exercising in Earnest

The real thriller is the standing-on-the-head stunt. Of course one does not really stand on the head, that is, if she is heavy enough to need seriously to reduce. What she does is to stand on the shoulders, balancing herself with elbows on the floor and hands on hips, waving the feet in the air like antennae.

It is comparatively easy to do when a person gets the hang of balancing herself. She sits on the floor, clasps hands under the knees and rocks forward and backward until she can touch the toes to the floor above the head. With a little practice she can hold them there, one foot balanced on top of the other—a nice way of resting up side down when one gets tired of the upright position.

After this has been mastered, one can gradually work the body into a perpendicular position, by throwing the feet upward, straightening and raising the body until the feet are straight above the head. Once the balance is obtained, the exerciser can ride an imaginary bicycle, describe circles with her legs, or indulge in any antics she may devise. It is great sport.

Then there are the "canned exercises." They are perhaps the easiest of all to take. The initiative required is merely that of winding and starting the phonograph. When the music

Above 190 *Under 170* *Under 150*

These pictures tell the story of how one woman brought her weight down, down, down to normal by dieting and exercise, with emphasis on dieting.

starts and a snappy authoritative voice commands, "Arms on chest! Ready! Begin!" one feels as if she must obey. Although the arms and legs ache and she feels as if her back would break if she went through another exercise, she must not quit. To the end of my days I will never hear a certain rollicking tune without having an almost irresistible impulse to bend over and touch my fingers to the floor.

Of course I kept a log of my diet and also a log of my weights, together with snapshots taken as the reduction periods covered each ten pounds. The first one showed a pudgy lady not very happy as to countenance. I labeled this one "Above 190." I might have called it "Under 200" but above 190 sounds ever so much lighter.

Every three weeks or so I had taken a new set of snapshots. Under 180, under 170, under 160, and at last under 150! I was reduced and I was well!

In the last picture, the happy face registered that I was the proud possessor of a figure that a Carmen Sylvia might envy. For my new figure, I had a wardrobe that rivaled a Rocky Mountain sunset.

And George Henry says: "I like you best just as you are."

NEXT month (HYGEIA *for September*) *Dr. DeVilbiss will write on "The Home Treatment of Obesity." Her article will contain a table of food values, sample diets for use in reducing, and recipes for foods that are filling yet have little or no food value.*

Dr. DeVilbiss considered herself a hopeless case, but she solved her own problem. Her solution may help you to gain a girlish figure.

That Wormy Child

PARK J. WHITE

IT IS remarkable how delighted—even flattered—many folk are by having certain favorite diagnoses made of their own or their beloveds' ills. How they thrill to the sound of "biliousness," "grippe," "ptomaine poisoning," "teething," and, alas! *"worms!"*

Now, if we except biliousness, which is scientifically beneath contempt—any of these diagnoses may be accurate enough, but they are sometimes made by doctors who are either too busy or too lazy to be painstaking, or still oftener by druggists, neighbors or relatives who are forever impelled to make some sort of diagnosis.

Nowhere is diagnostic mythology more potent or more popular than in relation to wormy children. Even in this generation of intelligent care of the young, worms are likely to be considered guilty until or even after they have been proved innocent. I know many grandmothers who are scornful of the doctor who ventures the suggestion that the child may not be wormy after all. For that matter, many persons devoutly believe in the influence of the quiet, kindly moon upon the activities of worms.

Child's Habits Cause Suspicion

Now, what does the poor child do to make his elders suspect or accuse him of being wormy? One might almost answer, "Anything." As a matter of fact, there are three performances on the part of the child which make it practically certain that some one in the household has at some time had serious thoughts of worms.

First, there is grinding the teeth at night. It is astonishing what a piercing, raucous noise a child can make when he does this. But let us, in all fairness to the child and to the worms, remember that there are several conditions which may produce this symptom, such as decayed teeth, infected gums or adenoids. Besides, there are a host of things that may prevent proper sleep and so lead to that state of semisleep during which all sorts of nervous habits are likely to be formed.

Certainly worms deserve a place in the long list of rest-preventers. To overlook them, to deny that they might be responsible for the symptoms, is at least as serious a mistake as to make a positive diagnosis of worms without proper evidence. Finally, with regard to the teeth-grinding mentioned, we must not forget that there are many children known to be infected with worms who never grind their teeth at all.

The second standard popular symptom of worms is nose-picking. The third is restlessness or twitching of any sort. Obviously, any nasal discharge or irritation can make a child start picking his nose, and such a habit once begun is very difficult to stop. Obviously again, the causes of restlessness in children are legion. All of them must be investigated and, still more important, the worms themselves or their eggs must actually be found before worm medicine is given, or far more harm than good will be done the child.

The list of symptoms, then, that worms do not cause, is a very considerable one. What symptoms do they cause? It depends, of course, upon which worm is guilty.

Varieties of Worms

I have heard parents refer to worms in much the same vague, uncertain way that men used to refer to evil spirits. Like everything else we talk about, when we discuss worms, we are likely to mean the kind of worms we are acquainted with. In the South, for example, the popular worm is affectionately known as "the hook."

In general, however, when persons speak of worms in children, they mean pinworms. When they don't mean pinworms, they mean roundworms. More rarely the remark is made that "he must have a tapeworm"; a remark which would be made less casually if the typical villainous-looking beef tapeworm were more commonly known.

As far as symptoms are concerned, one would think that the tapeworm, with his twenty-odd

feet of villainy, would cause more symptoms than the voracious appetite commonly ascribed to him. But it is an absolute fact that in practically every case of proven tapeworm infection, not a single symptom could reasonably be traced to the worm. Its presence was discovered only on appearance of segments of worm in the stools.

The same is true of the roundworms, with certain important exceptions. These beasts make up in enterprise what they lack in length. For, though they seldom do so, they may spontaneously pass out through the anus and cause tickling and all its results. Medical textbooks all present pictures of masses of roundworms obstructing the intestine and even passing upward to cause choking. It should be strongly emphasized that the latter is very unusual.

It is peculiar that sometimes children who harbor any roundworms at all harbor but a single worm instead of many. I know of a boy of 9 who was much alarmed one morning by finding he had passed a roundworm about eight inches long. I searched diligently and frequently for eggs and for further worms, after putting him through a course of treatment. He has never passed any more.

As is well known, many of the tropical worms cause severe, and some of them dangerous, symptoms. The hookworm, formerly so common in some of our own southern states, produces laziness, apathy, anemia and perverted appetite; fortunately these symptoms are not found in patients infected with the more familiar parasites.

Laymen—poor wretches—and patent medicine makers—rich wretches—share the idea that getting rid of the larger worms mentioned is a very simple matter, especially if you follow the directions on the bottle. Any one with hospital experience knows how painfully false this is. The proper dietetic management of the patient, the determination of the dose of cathartics, proof of the passage of a tapeworm's head—these require real medical acumen, not to mention courage.

The same is true of the treatment of the individual case of hookworm. From the point of view of sanitary engineering, of sociology, of sheer medical enterprise, the task of ridding the south of hookworm infection has redounded to the everlasting credit of the men responsible, and of the Rockefeller Foundation, without whose financial aid the work could not have gone on.

The Pinworm, Her Life and Work

I have touched upon the activities and the treatment of these important parasites, in order to clear the way, as it were, for a separate consideration of that tiny but mighty pest, the pinworm. She it is that 90 per cent. of persons mean when they talk of worms.

The answer to the question, Where do they come from? has shared in the general mythology about worms. Many are convinced that they come from eating sweets; they often follow up this conviction with the dire threat, "If you don't stop eating so much candy you'll get worms." It requires but little thought to make it clear that neither sugar nor candy undergoes a magic, devilish transformation into worms inside the child. Pinworms come from pinworms, and from nothing else. Where the first pinworm came from I shall have to leave to ministers and biologists to decide, with perhaps a little help from Mr. Bryan.

We all know how insanitary are the habits of children, what a literally hand-to-mouth existence they lead. If to this natural tendency is added lack of household sanitation, lack of care in washing raw fruits and vegetables, lack of care in cleansing spoons, dishes and other utensils, plus a few other infected children in the house—there you have conditions in which any family of pinworms would revel.

The fully developed female pinworm is about half an inch long and can best be seen at night, crawling about the anal region. After the eggs are ingested by mouth, the adults develop in the small intestine, where breeding takes place and the males die. The females pass out of the anus at night, full of embryo-containing eggs, which are hatched out in the folds.

Now, gross and microscopic stool examination by a trained person is of the utmost importance in the diagnosis of tapeworm or roundworm infection. But the habits of the pinworm make the examination of the anal region at night of at least as great importance as the physician's examination of the stool, for the worms will probably have died by the time the stool reaches the physician. The eggs are seldom really incorporated in the stool substance but are found in scrapings from the anus.

Wrong Treatment for Worms

As far as the child's symptoms are concerned, itching of the regions involved is obvious. The causal relation between such worms and bedwetting can easily be seen. Even during sleep, the child scratches about the anus, transfers eggs and even worms to the mouth, and so constantly reinfects himself. There is no intermediate host; that is, no other animal necessary for a certain stage of development of the worm.

The reason so many mothers wail that pinworms are hard to get rid of is that the methods they use are neither proper nor thorough. I have worried along for months with a certain family, all nine of whom are afflicted. Because the children don't like the treatment, the parents lack the courage of their convictions, and the worms thrive on.

The much-advertised patent medicine, old Dr. So-and-So's Vermifuge, may be responsible

for failures. Some of these concoctions may be of value because of the santonin or other really useful drugs which they contain. But this sort of treatment alone, though possibly successful in occasional cases, is likely to fail in the majority because of the necessity of taking additional precautions against reinfection.

Treatment of Pinworms

The proper treatment of pinworms consists in frequent enemas of infusion of quassia or garlic, and, in stubborn cases, the administration of santonin. To prevent reinfection, the night clothes must be arranged, whether by buttons or by drawstrings, so that the child cannot get his hands through to scratch the anus. The fingernails must be kept short. An ointment of ammoniated mercury or other antiseptic of proper strength should be applied nightly in order to kill the embryos. The genitalia should be thoroughly searched and cleansed, lest the worms should find lodgment there.

I hope I have made it clear that there are several things which conscientious parents should remember about worms. First, they must not give the child bad treatment for worms that do not exist. Second, if the child actually has worms, it is essential to know what kind of worms they are, and then fight to a finish with the proper weapons. There is no reason why, to use the picturesque language of Job, "the worm shall feed sweetly on him."

Preventing Typhoid Fever

RALPH H. MAJOR

TYPHOID fever, for generations one of the "captains of the army of death," now kills fewer people in the United States than automobiles. The death rate from typhoid fever is an accurate index of the sanitary intelligence of a nation. The steady fall in the number of deaths from typhoid fever is encouraging proof that our national intelligence is rising.

The cause of typhoid fever is a small germ first isolated by Eberth, a German, in 1880, and like all bacteria, it multiplies with extraordinary rapidity. When conditions for life are favorable, a single organism may produce several million offspring in twenty-four hours. The typhoid bacillus cannot live without moisture and prefers to live in water. It is rapidly killed by drying, but can live in ice for several weeks; a fact of considerable importance to those whose ice supply comes from lakes and rivers and not from the city ice plant.

Since the normal habitat of the typhoid bacillus is water, it follows that typhoid fever is largely a water borne infection, and its eradication depends mainly on the control of the supply of drinking water. While the poet may sing of the deep, cold draught from the bubbling spring, and the farmer may boast of the wonderful water in his well, more cases of typhoid fever can be traced to the drinking of spring and well water than to the drinking of river water, although the virtues of the latter have not been celebrated in verse and song. The muddy city water has been passed through a process of purification that destroys the disease germs, while the pure, clear spring water may be draining from some outhouse that contains excreta from a typhoid fever patient.

A few years ago, in a certain town, a prominent citizen died of typhoid fever. Resolutions were passed by various civic bodies, beginning with the inevitable "whereas Providence has seen fit to remove our dear friend from our midst." A copy of these resolutions was shown to the health officer.

Not Providence, but City Officials

"Don't blame this on Providence," he flashed, "blame it on the city officials. For five years I have been urging them to install a modern water supply and sewage disposal system."

This health official was familiar with statistics taken throughout the world, showing that the installation of a modern water supply and sewage system is invariably followed by an astounding fall in the prevalence of typhoid fever.

In some of the European cities in which vital statistics have been kept for many years the fall of the typhoid death rate following the installation of modern systems is striking. If you had lived in the city of Munich in 1860, your chance of dying from typhoid fever was nearly forty times as great as it was in 1900.

In the middle ages leprosy was rampant in Europe. The sanitarians of that age solved the problem by locking up the lepers and keeping them from coming into contact with the rest of the people. This was hard on the lepers, but good for the rest of the population. In this more enlightened age such measures would be considered harsh. In typhoid fever it is, however, necessary to lock up and kill all the bacteria

coming from a typhoid patient, since all infected water becomes so by the bacteria from a typhoid patient.

The first principle in eradicating typhoid fever is to destroy or sterilize the excreta from typhoid patients. If this were properly carried out in every instance, a typhoid fever patient would, in a generation, be about as rare as an auk.

Spread and Prevention of Typhoid

Typhoid fever carriers have formed the subject matter of many medical articles and of still more sensational newspaper stories. These are individuals who do not have the disease themselves and may never have had it, but who harbor the bacteria and scatter the disease germs wherever they go. Many will remember the celebrated "Typhoid Mary," a cook by occupation, who was responsible for many cases of typhoid fever before she was proved to be a typhoid carrier and restrained from scattering the bacteria.

In Bristol, England, a few years ago, an epidemic was traced to a cook who a year before had caused an epidemic in another town. From Zurich the case of a woman carrier was reported who in the course of thirty-one years gave typhoid fever to her husband, son, daughter-in-law and to no less than nine servants. The excreta of such persons must be treated like that of a patient suffering from the disease. We can easily imagine the fate of these carriers at the hands of the middle age sanitarians who incarcerated all lepers.

Epidemics of typhoid fever have resulted from infected ice cream, ginger ale, oysters and shell fish. These experiences emphasize the importance of using pure, uncontaminated water or milk in preparing food and in keeping the water where oysters and shell fish live free from infection with typhoid excreta.

The purity of our drinking water is tested by bacterial counts of water specimens. When the count is bigh, the health officials issue a warning. This does not mean that typhoid bacilli have been demonstrated in the water, for this is rarely possible. It means that the colon bacillus is present in the water in large numbers.

This organism is a normal inhabitant of the human intestine and its presence in large numbers shows that the water is contaminated by sewage. Such sewage may contain typhoid bacilli from the excreta of a typhoid patient and is, therefore, always a possible source of disease.

Flies may pick up typhoid bacilli on their feet and scatter the disease. In the Boer War, many field hospitals were infested with flies and many soldiers were infected by these flies crawling over their food at mess. This spread of typhoid fever is another of the capital charges against the murderous fly and an added reason for the proper screening of all food, of all typhoid patients, and of an ever vigorous "swat the fly" campaign.

Vaccination against typhoid fever ranks deservedly as one of the great achievements in preventive medicine. To prevent is always greater than to cure and this fact is especially applicable to typhoid fever, which cannot be cured but can be very largely prevented by vaccination.

It has been known for generations that an attack of typhoid fever usually makes a person immune from typhoid for life. It was later discovered that a similar immunity would be produced by injecting the killed bacilli into normal people. These killed bacilli produce in the body certain substances called antibodies that destroy typhoid bacilli, should they gain entrance to the body.

A decade ago it was common in hospitals to have a certain number of cases of typhoid each year among the doctors, nurses and orderlies who attended typhoid patients. Such a toll of disease and death was regarded simply as one of the hazards of the day's work. At present, when doctors, nurses and attendants in hospitals are vaccinated, typhoid fever is rare among the hospital personnel.

The results of such antityphoid vaccination in armies during the past ten years are some of the most striking health statistics ever published. During the World War there were 213 deaths from typhoid in the American Army, with a strength of 2,100,000 men. If the death rate from typhoid which occurred during the Spanish-American War had prevailed, there would have been 68,164 deaths, a death rate 330 times as great. In the British Army during the Boer War, 123 out of every 1,000 soldiers contracted typhoid fever, while during the World War only one out of every 1,000 soldiers developed typhoid.

Watch Water, Sewerage and Flies

Typhoid fever offers a striking example that the principal business of every physician is to destroy his own business. An old retired physician was recently talking to a group of younger doctors. He said: "I don't see how you fellows make a living. The first three years I was in practice, I made my living treating typhoid fever. You fellows don't see more than one case of typhoid in three years." A few years ago the medical student saw hospital wards filled with typhoid patients; now such a patient is somewhat of a curiosity, the object of unusual attention and study. Such is the change that a generation of sanitation has produced.

The cause and prevention of typhoid may be summed up in a few words. Watch the water, watch the sewerage, watch the flies. If typhoid fever is prevalent, get vaccinated.

International

This five year old water marvel, Jackie Ott, is aquaplaning across the largest swimming pool in the East, the Olympia Pool at Long Beach, Long Island.

Rules for Swimming Pool Operators

SWIMMING is healthful, provided the pool you swim in is clean. If it is dirty and germ laden, you are flirting with nose and ear infection and a host of distressing and dangerous diseases.

In order to protect persons using swimming pools against the possible contamination of the pool water by other swimmers, a committee of the American Medical Association has made recommendations to pool operators and asks that the following rules be used for the sanitation and safety of swimming pools:

1. All swimming pools are to be maintained with a practical minimum amount of contamination. There shall be not more than 1,000 colonies per c.c. of standard agar medium after incubating for twenty-four hours at 37 F. The *B. coli* content shall be such that gas is produced in not more than one half of standard lactic broth cultures after incubation for twenty-four hours with one c.c. of water.

2. Water in the pool shall at times of use be sufficiently transparent, under existing lighting conditions, that when the water surface is not excessively agitated by bathers, a person can stand at the side of the pool and see the bottom distinctly where the depth of water is six feet or less.

3. Facilities for adequate protection of the pool water against unnecessary sputum contamination by bathers shall be provided.

4. All persons known to be or suspected of being afflicted with infectious diseases shall be excluded from the pool.

5. Contamination of the pool resulting from lack of personal cleanliness of bathers shall be maintained at a minimum.

6. Construction and appliances shall be such as to reduce to a practical minimum the danger of drowning and of injury to bathers from falls or collisions.

7. Dressing rooms, hallways, toilet rooms, shower rooms, and other places to which patrons of a bath house have access, shall be kept clean and well ventilated at all times.

8. Bathing suits and towels, when distributed to bathers by the pool management, shall be clean and free from excessive bacterial contamination.

9. The management of the pool shall have printed and posted in conspicuous places about the establishment notices briefly informing patrons of the requirements to which they are subject in the maintenance of a safe and sanitary pool. This notice should be so placed that all bathers cannot fail to read it before entering the pool.

Tinkering with the Eyes

Fitting Glasses on the Mail-Order Plan

ARTHUR J. CRAMP

THE MOST remarkable thing about quackery is the ease with which it is "put over." An intensive study of the subject over a period of many years forces the sober conclusion that there is no kind of medical quackery too preposterous, too impossible, too unthinkably fantastic for the public to accept. Mark Twain might have been referring to quackery when he said: "The absurdity that the human race won't swallow hasn't yet been invented."

People who need glasses may be grouped into four classes: (1) those who go to an oculist or ophthalmologist who, as a graduate physician, knows not only how to fit glasses but also is thoroughly familiar with the eye in health and disease; (2) those who go to the optometrist, a man who has taken a course in fitting glasses and who is licensed by the state to perform this work, but is neither competent nor permitted to treat disease conditions of the eye; (3) those who go to the five-and-ten-cent stores and fit themselves with glasses, and (4) those who believe that by sending in their age they can be fitted by mail-order quacks on the correspondence plan.

Let us suppose that an advertisement such as this appeared in a farm paper:

> FARM SURVEYING BY MAIL
>
> Send us a statement giving the number of acres in your farm and we will mail you a correct survey of your property.

Could any farmer be found who is so ignorant of the fundamental principles of surveying that he would believe an advertisement of this kind? It is doubtful. Or let us suppose an advertisement such as this:

> FALSE TEETH BY CORRESPONDENCE
>
> No matter where you live I positively guarantee to give you a perfect fitting set of false teeth. Tell me your age and let me know the kind of beef-steak you buy and I will send you a handsome set of solid ivory, copper-riveted false teeth that will enable you to take first prize at any pie-eating contest.

But, you say, this is preposterous; such far-fetched advertisements are unthinkable. Not so. A Chicago concern that is said to be making over a million dollars a year sells spectacles on the mail-order plan and all the information it calls for in the alleged fitting of glasses is your age and, in certain instances, the number of years you have worn glasses. Advertisements have appeared in some of the cheap weeklies and monthlies as well as in certain farm papers that read in part as follows:

> NEW TRU-FIT SPECTACLES FREE ON TRIAL
>
> I guarantee a perfect fit or will make no charge whatever . . . These splendid glasses will enable you to read the smallest print, thread the finest needle, *see far or near.* They will protect your eyes, preventing eye strain and headache. All I ask is that you send me your name, address and age.
>
> RITHOLZ SPECTACLE COMPANY, CHICAGO

With each advertisement there is a coupon to fill in with the name, address and age. Another method used by the Ritholz concern in angling for dupes is that of sending to "prospects" a self-addressed postcard which the recipient is asked to return after writing on it his name and address, his age and the number of years he has worn glasses.

"Ritholz Spectacle Company" is only one of many names used by the National Watch and Jewelry Company that is run by the Ritholz family—father and sons. Other names that seem to be used or to have been used by the same concern in selling spectacles on the mail-order plan are: "Chicago Spectacle House," "Paramount Optical Company," "U. S. Spectacle Company," "Popular Spectacle Company," Madison Spectacle Company," "Fitwell Spectacle Company." In order to test the ability of this concern to fit glasses a number of the cards were filled in according to the instructions and sent to this mail-order house.

Some Elementary Optics

Before describing the results of this investigation, it may be well to review briefly a few elementary facts. In the normal eye the rays of light are brought to a focus exactly on the retina, that is on that sensitive portion at the back of the interior of the eye that transmits the impulses to the brain and gives us the sensation we call sight.

In the eye that is not normal these rays may be brought to a focus either a certain distance in front of the retina or a certain distance back of the retina. When focused in front of the retina

Photographic reproduction (reduced in size) of a typical advertisement of the Ritholz Spectacle Co. Note the statements that the glasses sent by the concern will permit you to "see far or near," and will prevent eyestrain. On the contrary, there is but one chance in thousands that the glasses this concern sends will meet the optical requirements of those buying them. There is every likelihood that instead of "preventing eyestrain," as advertised, they will cause eyestrain.

the person is said to suffer from near-sightedness (myopia) because he can see near objects more clearly than distant ones. To correct this condition glasses are prescribed that have concave (diminishing or minus) lenses which so bend the light rays that they are brought to a focus where they belong, on the retina.

When the light rays come to a point behind the retina we have far-sightedness (hyperopia), so called because objects at a distance can be seen fairly clearly while near objects appear blurred. Far-sightedness is remedied by wearing spectacles with convex (magnifying or plus) lenses.

A third form of refractive error exists when the rays of light in one axis of the eye are brought to a focus either in front of the retina, or behind the retina, while in another axis of the eye they come perfectly to a focus on the retina. In this case we have the condition known as astigmatism. An astigmatic person may be able to see a horizontal line with perfect clearness, while a vertical or a slanting line will be more or less blurred, or vice versa. The correction of astigmatism differs from the correction of simple far-sightedness and simple near-sightedness in that the spectacle lenses instead of being parts of simple spheres, either convex or concave, have to be parts of cylinders with the axis of the cylinder placed at right angles to that meridian of the eye that is at fault.

For the purpose of this article it is not necessary to go further into details regarding astigmatism, because the concern apparently makes no effort to correct anything except far-sightedness. All of the glasses that were sent were of the magnifying or convex type and were suited only to a person suffering from far-sightedness of the simple (non-astigmatic) type. The best way to demonstrate, however, the failure of the mail-order spectacle concern to "deliver the goods" will be to detail some of the test cases that were made in investigating the Ritholz methods.

Some Test Cases

CASE 1.—A far-sighted man, age 52, who had worn glasses six years. Age and the number of years he had worn glasses sent to the Ritholz concern. His eyes tested by a skilled ophthalmologist were found to need convex lenses, of course, as follows: right eye—distant vision, plus 1¾ strength (+ 1.75 diopters); left eye—distant vision, plus 1½ strength (+ 1.5 diopters; right eye—reading, plus 3¾ strength (+ 3.75 diopters); left eye—reading, plus 3½ strength (+ 3.5 diopters). It may be stated incidentally that this person also suffered from a mild degree of astigmatism in each eye. The Ritholz Spectacle Company on the basis of the data furnished sent a pair of glasses that were found to be simple convex lenses, *the same for each eye,* of plus 2½ strength (+ 2.5 diopters). Naturally these glasses were not suited to the individual in question either for distant vision or for reading.

CASE 2.—The same individual as in Case 1, but the data were sent in to the Popular Spectacle Company, another name under which the same concern does business. This brought a pair of glasses containing simple convex lenses, the same for each eye, each plus 2¾ strength (+ 2.75 diopters).

CASE 3.—A near-sighted man, age 35, who had worn glasses nine years. Age and the number of years he had worn glasses sent to the Ritholz concern. His eyes tested by an ophthalmologist were found, of course, to need concave lenses as follows: minus ½ strength (— 0.5 diopter) for the right eye; minus ¼ strength (— 0.25 diopter) for the left eye. The Ritholz Company sent him a pair of spectacles, each lens of which was convex of plus 1½ strength (+ 1.5 diopters). He was unable to see as well with the Ritholz spectacles as he was with his unaided eyes.

CASE 4.—A near-sighted girl, age 21, who had worn glasses four years. Age and number of years she had worn glasses sent to the Ritholz concern. Tested by an ophthalmologist her right eye was found to require a concave lens of minus 1 strength (— 1.0 diopter) and her left eye a minus 1½ strength (— 1.5 diopters). She received from the Ritholz concern spectacles, each lens of which was convex of plus 1¼ strength (+ 1.25 diopters). In other words, as in Case 3, the Ritholz concern on the basis of the information furnished sent a short-sighted person glasses for far-sightedness.

CASE 5.—A far-sighted man who needed a plus ¼ strength (+ 0.25 diopter) lens for the right eye and a plus ½ strength (+ 0.50 diopter) lens for the left eye and in addition needed correction for astigmatism sent the Ritholz Company his age and the number of years he had worn glasses. He received a pair of spectacles each lens of which was plus 1 strength (+ 1.0 diopter). This was for both distance and close work. The glasses were, naturally, worthless for this man.

Without going into further details regarding numerous other test cases sent to the Ritholz concern, it is sufficient to say that in no instance did the glasses sent meet the optical require-

ments of the person sending. In every instance the glasses contained exactly similar lenses for each eye and all the lenses were convex (magnifying). In other words, they were good for far-sightedness, and then only in such instances as the amount of far-sightedness in each eye happened to be the same character and degree as the Ritholz Company happened to have guessed.

The "Eye Tester" Blank

With every pair of "trial" glasses that the Ritholz concern sends there comes a form letter stating that if the information that has been sent in is correct the glasses "should prove to be just right for you for reading or sewing or for long distance." The letter then states that if the glasses sent do not fit the case "it is not my fault but you may return them" after answering all questions on the exchange blank. As an exchange blank comes with every pair of spectacles sent out it is evident that the Ritholz Company expects the first pair of glasses to be unsatisfactory in the majority of instances. The prospective victim is asked then to fill out the exchange blank, which in addition to having ten lines of different sized type, calls for an answer to the following questions:

"A.—Did the trial pair fit you for reading?
"B.—Put on the spectacles and by moving this sheet to and from your eyes see at what distance you can read this print best. Here state at how many inches.
"C.—How old are you?
"D.—How many years have you used reading glasses?
"E.—How many lines of print can you read on my test sheet 13 inches from the eye without spectacles?
"F.—Now put on my spectacles. How many lines of print can you read on my test sheet 13 inches from the eye with my spectacles?"

This exchange blank is to be filled in and sent back by first-class mail with the first pair of spectacles—and $3.98. In order that the Ritholz method of fitting spectacles might be given a complete test, some further work was done. Some of the test cases follow:

Some Further Tests

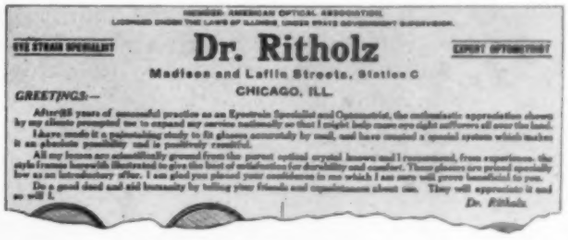
Case A.—Mr. L. B. sent to the Ritholz concern one of their cards, giving his age and the length of time he had worn glasses. In due course he received a package containing a pair of spectacles, each lens of which was found to be convex or magnifying, of plus ½ strength (+ 0.5 diopter). As he was totally unable to see with these glasses he filled in the exchange blank, after testing his eyes in accordance with the instructions furnished by Ritholz, sent in the exchange blank with a money order and the first pair of glasses. Some time later he received a second pair of glasses. These, when tested, were found to be exactly the same as the first pair sent, namely: convex glasses of plus ½ strength, the same for each eye. This individual's eyes when tested by an ophthalmologist were found to be markedly near-sighted, each eye requiring a concave lens of minus 12 strength (— 12.0 diopters). In addition the man had a high degree of near-sighted astigmatism.

Case B.—Mr. L. H. M. filled in the usual Ritholz card and received a pair of spectacles, each lens of which was convex of plus 1½ strength (+ 1.50 diopters). These were sent back with the blank form filled out for the "eye tester" instructions, accompanied by the required money order. He then received another pair of spectacles from the Ritholz concern, each lens being plus ½ strength (+ 0.50 diopter). When M. H. L.'s eyes were tested by a skilled oculist it was found that he was near-sighted, his right eye requiring a minus 4 strength (— 4.0 diopters) lens, and his left eye minus 4¼ strength (— 4.25 diopters). Furthermore his right eye had its short-sightedness complicated by astigmatism. Naturally the glasses sent by the Ritholz concern, even after the instruction blank had been filled in, were utterly worthless.

Case C.—Mr. D. M. filled out one of the Ritholz cards giving his age and the length of time he had worn glasses, and received a pair of spectacles from the concern that were of the convex type plus 1¼ strength (+ 1.25 diopters), the same for each eye. These glasses were found useless and were returned with the money order and the "eye tester" blank filled out. The second pair that came were found also to be convex glasses, each lens of the same strength and each a plus ¾ strength (+ 0.75 diopter). When Mr. D. M.'s eyes were tested by an oculist it was found that he was short-sighted, and, therefore, of course, required concave glasses, his right eye calling for a minus ¾ strength (— 0.75 diopter) lens, and his left eye a minus ¼ strength (— 0.25 diopter) lens. Each eye also was found to be moderately astigmatic. Here again the lenses sent by Ritholz were worthless.

Case D.—Mr. S. M. H. sent in a Ritholz card and received a pair of the usual convex glasses each lens having a strength of plus 1¼ (+ 1.25 diopters). These were returned with the information called for on the "eye-tester" blank and the necessary money-order. The Ritholz company then sent another pair of convex glasses each lens being plus ½ strength (+ 0.50 diopter). These glasses were utterly unfitted for Mr. H.'s optical requirements as his right eye needed a lens for astigmatism alone while his left eye needed a plus 2½ strength (+ 2.50 diopters) lens with a correction for astigmatism.

Such then is the scheme of this many-named mail-order, spectacle-fitting concern. To any one familiar with the principles underlying the correction of refractive errors the idea of attempting to do such work on the mail-order plan is inherently absurd. Of the great number of people who need glasses there are comparatively few in whom the refractive error is the


MEMBER AMERICAN OPTICAL ASSOCIATION
LICENSED UNDER THE LAWS OF ILLINOIS, UNDER STATE GOVERNMENT SUPERVISION.

EYE STRAIN SPECIALIST — **Dr. Ritholz** — EXPERT OPTOMETRIST

Madison and Laflin Streets, Station C
CHICAGO, ILL.

GREETINGS:—

After 25 years of successful practice as an Eyestrain Specialist and Optometrist, the enthusiastic appreciation shown by my clients prompted me to expand my service nationally so that I might help many eye sufferers all over the land.

I have made it a painstaking study to fit glasses accurately by mail, and have created a special system which makes it an absolute possibility and is positively remitted.

All my lenses are scientifically ground from the purest optical crystal known and I recommend, from experience, the style frames herewith illustrated to give the best of satisfaction for durability and comfort. These glasses are priced specially low as an introductory offer. I am glad you placed your confidence in me which I am sure will prove beneficial to you.

Do a good deed and aid humanity by telling your friends and acquaintances about me. They will appreciate it and so will I.

Dr. Ritholz

A year or two ago this concern was advertising, not as a company but as a "doctor"—an "eye strain specialist" and "expert optometrist" of 25 years' "successful practice." No member of the Ritholz family is a physician. The city directories class them, respectively, as "jeweller," "watchmaker" and "engraver." There is also one who seems to be a lawyer.

same in each eye; yet the Ritholz concern apparently sends out nothing but glasses having the same strength lens for each eye. Moreover, of those that need spectacles, an enormous number are short-sighted; yet the investigation indicates that the Ritholz concern makes no attempt to furnish glasses for short-sightedness. And again: a large percentage of those who are suffering from either near-sightedness or far-sightedness are also astigmatic; and the Ritholz concern, it would seem, makes not even a pretense of correcting astigmatism.

A circular letter, on the stationery of the Chicago Advertising Agency, throws a sidelight on the methods of the Ritholz concern. Incidentally, investigation indicates that the Chicago Advertising Agency is conducted by that member of the Ritholz family who occupies the position of secretary and manager of the spectacle fitting concern! Apparently the "agency" is merely a "paper" organization through which the Ritholz people dispose of their "sucker lists." The letter, which was mailed a few months ago, announced:

> "Our clients, the Ritholz Spectacle Company of this city, are now ready to release their 1924 orders which will total approximately one million names. These are all original replies received from advertising in mail order and farm publications. . . . Enclosed please find specimen of their letters. We can rent these to you, shipping you the original letters for $5.00 per thousand."

In plain, unvarnished language this means: Here are a million dupes who have bitten on, or are interested in, this medical mail-order scheme. If you want an up-to-date "sucker list" here's your chance—only $5.00 a thousand.

Where the Danger Lies

But, you may ask, what danger is there in this scheme if the Ritholz concern is willing to take back glasses that the purchaser declares do not fit him? The danger lies in the fact that there are hundreds of thousands of people, especially those in or past middle life, who are far-sighted. This group furnishes the dupes that make millionaires of such a concern as the Ritholz Company. They order glasses and obtain convex lenses that permit them to see more clearly than they see without glasses. But in the vast majority of instances such glasses must of necessity be utterly unsuited to the person that purchases them. They may be too strong for one eye and too weak for the other eye, or they may be too strong or too weak for both eyes. As already pointed out, they do not correct any astigmatic errors. The result is that the purchaser is duped into the belief that he has been fitted because he can see more clearly with the mail-order glasses than without them. He wears them and may throw on his eyes a greater strain than if he wore no glasses.

Let Me Send You FREE
ON TRIAL—A Pair of My Finest Shell Rim Spectacles
No matter where you live, I positively guarantee to give you a perfect fit or there will be no charge whatever. I promise to send you a pair of glasses that will enable you to see perfectly and satisfy you in every way, or you will owe me nothing. They will protect your eyes, preventing eye strain and headache. They will enable you to read the smallest print, thread the finest needle, SEE FAR OR NEAR.
Send No Money!
PAY ONLY WHEN SATISFIED
I will not accept a single penny of your money until you are satisfied and tell me so. Simply fill in and mail this card, giving me all the information I ask for and I will send you a pair of my Extra Large Shell Rim Spectacles, for you to wear, examine and inspect, for ten days, in your own home. The glasses I send are not to be compared with any you have ever seen advertised. They are equal to spectacles being sold at retail at from $12.00 to $15.00 a pair. You will find them so finely ground as to enable you to see far or near, do the finest kind of work or read the very smallest print.
THESE EXTRA LARGE SIZE LENSES, WITH SHELL RIMS are very becoming and your friends are sure to compliment you on your improved appearance. There are no "ifs" or "ands" about my liberal offer, I trust you absolutely. You are the sole judge. If they do not give you more real satisfaction than any glasses you have ever worn, you are not out a single penny. I ask you, could any offer be fairer?
SPECIAL OFFER
If you send your order at once I will make you a present of a handsome gold lettered, velveteen Lined, Spring Back, Pocket Book Spectacle Case which you will be proud to own. Sign and mail this card NOW.
Ritholz Spectacle Co. Largest Mail Order Spectacle House in the World.
CHICAGO, ILL.

Reduced facsimile of one side of the ready addressed postcards sent out by the Ritholz concern for the dupes to fill in with age, number of years glasses have been worn and name and address.

These facts have been brought out well by the Associated Advertising Clubs of the World, which through its National Better Business Bureau is trying to create a maximum public confidence in advertising by making all advertising trustworthy. This organization specifically referred to the Ritholz concern thus:

"To an intelligent person it needs no demonstration that such reckless and unscrupulous exploitation of visual defects is highly dangerous. Thousands of people, uninformed regarding optometrical matters, may be led into patronizing these callous advertisers, who care nothing for the lasting damage they may do to the eyesight of their victims so long as they 'get the money.' . . . No one can even guess how many unfortunate people, whose eyes might have given them good service for a lifetime, have suffered all the pain and injury which this bungling inaccuracy necessarily entails. Many a fairly good pair of eyes may have been absolutely ruined by these methods."

Malaria

C. C. BASS

MALARIA is carried by mosquitoes. Almost everybody now knows that, but there are certain facts connected with the habits of these insects and their bearing on the transmission of malaria that ought to be much better known. If they were, persons who have malaria would be more interested in getting rid of it.

There are almost a hundred different kinds of mosquitoes in this country. Of these only about four and practically only two (Anopheles) carry malaria. The others are harmless as far as transmission of malaria is concerned, but of course not in other particulars.

Different kinds of mosquitoes have different natural habits as to flight, feeding and breeding. Some habits of the mosquitoes that carry malaria are important in this connection and determine their efficiency as malaria carriers.

Mosquito Must Have Blood Meal

While certain species of mosquitoes are thoroughly domesticated and breed and live near by or in residences, those that carry malaria are more wild and spend most of their time under cover of dense vegetation such as swamps, rank growth of grass, weeds and vines. The larval stage—the "wiggle tail" stage—is passed in suitable pools or collections of water. These, the female mosquito selects by natural instinct to deposit her eggs in. They are generally pretty well surrounded and covered by vegetation, usually swampy growth.

After the insect develops wings and is able to fly, the females soon reach the stage at which they produce eggs and in this way reproduce and perpetuate the species. But it is necessary for them to obtain a blood meal before they will develop eggs. If we rear mosquitoes in captivity and keep them in cages, not allowing them to get blood, they never produce eggs. But let one of them get one blood meal and she develops and lays eggs within a few days. The blood meal that provides the necessary animal protein is essential, therefore, for reproduction and perpetuation of the species—a function which nature always provides for, in all living things.

It is interesting in this connection to note that only female mosquitoes bite. Males have not the necessary "bill" with which to puncture the skin and draw blood. Persons are apt to think that, if this is so, all the mosquitoes around them must be females.

Perhaps the female mosquito spends a day or two near the place in which she was reared, but when she reaches the stage at which she needs a blood meal she flies in one direction or another in search of some animal or a man from which she can obtain it. Some of them seem to prefer animals, but others accept or even select man by preference.

The kind of mosquitoes that carry malaria do most of their feeding after sundown. In fact, they bite mostly in the dark in or around the house and do not venture into a well lighted room. Much of the malaria transmission, therefore, takes place while the victim is in bed and asleep. After feeding, the mosquito may remain around the house for two or three days or longer, hiding in some dark place during the

Here is a house properly screened against mosquitoes. It may well be looked upon as a model for dwellings in districts in which malaria is prevalent.

United Fruit Company

daytime and perhaps coming out and taking another meal at night.

After a few days she has developed her eggs and the time has arrived to lay them. Natural instinct not only leads her to deposit them on water but to deposit them under such surroundings as are favorable for her particular kind of mosquito. She does not go aimlessly in any direction, but has a tendency, at least, to go back to the same place in which she was reared. There she deposits her eggs near, or in, the identical pool from which she sprang.

Soon after she deposits her eggs she requires another blood meal to enable her to develop more eggs. She again goes back to the same location, perhaps to the same house, and feeds again. In due time she returns to the pool and deposits more eggs. In this way she goes back and forth from the breeding ground to feeding ground very much as bees fly from hive to clover field. This is continued throughout the life of the insect.

St. Louis Southwestern Railway

In contrast to the well screened house on the preceding page are these shacks at the very edge of a swamp that breeds millions of malaria mosquitoes. By draining such swamps and screening the cottages, malaria could be cheated out of hundreds of victims.

Greatest Danger to One's Own Family

If it should happen that the person from whom the mosquito first draws blood has malaria and, therefore, the germs of malaria—malaria parasites—in his blood, these begin to grow and multiply in the mosquito. In three or four weeks there are many malaria parasites in the mosquito, some of which make their way into what is called the salivary gland. This gland is provided by nature to secrete a substance which the mosquito injects into the skin at the time she bites and which makes the blood flow freely. Incidentally, it causes the itching, stinging sensation with which all who have been bitten by mosquitoes are familiar. A mosquito with malaria parasites in her salivary glands can and will infect the next person she bites by injecting these parasites into him.

As soon as they are injected into the skin they multiply rapidly and after about two weeks the person becomes ill. In this way and in this way only is malaria carried from one person to another. Mosquitoes get the malaria parasites from one person and after a suitable period put them into another.

The habits of malaria-bearing mosquitoes are such that most of the transmission takes place between persons closely associated with regard to residence; in fact, persons living in the same home. A person who has malaria parasites in his blood is a much greater menace to the life and health of others living in the same house with him than he is to other persons. Most cases of malaria in a home or in a family come from other cases in the same home.

Since malaria is easily diagnosed by proper examination of the blood and is easily cured by proper use of quinin, there is little excuse for one to continue to have it and thereby to be a source of sickness and sometimes death to his associates and loved ones. *Screen the mosquitoes out and cure the malaria.*

The Baby's Teeth

FREDERICK BOGUE NOYES

"BABY has a tooth." The announcement is always the occasion of great excitement. Father is greeted with it as soon as he arrives home. Sisters, cousins, aunts come in to see the new tooth, and the important fact is spread by mail all over the country. There is an old tradition that if a child, especially a brother, sister or cousin, makes the important discovery he should receive a present.

This amount of excitement is not at all out of proportion to the importance of the event, at least to the child, for it is the first appearance of structure about which its life centers in a most fundamental way. Health, comfort, beauty and efficiency will largely depend upon good teeth. Some one has said, "It is by their teeth that all men get their living."

In primitive times little care or thought was, or needed to be, given to children's teeth, but as civilization has developed the care that nature gave to the teeth has been perverted by changed food supply and social conditions. Thought and care must be substituted for nature's harsher methods. The commonest cause for the disaster so commonly found in the child's mouth is expressed in the words of the mother, "I did not know."

Mother Must Watch Her Diet

Few know how early the formation of the teeth begins. By the middle of the fourth month of life before birth, the formation of all the temporary teeth is well under way. The teeth are beginning to calcify and the germs of the permanent teeth that are to replace them have begun to develop.

At birth the tiny baby jaws contain, partly developed, all of the temporary teeth and all of the permanent ones except the second and third molars. Of these the four second molars probably start before the end of the first year and the four third molars (wisdom teeth) about the second year. The crowns of all the temporary teeth are partly calcified as are a large part of the crowns of the four first permanent molars. What the baby's teeth are to be is, therefore, largely determined before it is born, and their structure is dependent on the health and nutrition of the mother.

Chemical examination of the blood during pregnancy seems to show that if there is no change from the ordinary diet the proportion of calcium (lime) in the blood is reduced.

The demand for lime to build the bones and teeth of the child is too great for the supply in the ordinary diet. If no other source is obtained, nature makes an attempt to supply the child at the expense of the mother and lime is taken from her bones. This is not normal and occurs only to make up for a deficiency in the food. Scientific observation has proved that by increasing the calcium (lime) in the diet, the calcium of the blood can be maintained at the normal level, and the bones and teeth of the child properly formed.

Sources of Food Calcium

Milk, figs, cabbage, and other vegetables are important sources of food calcium. It is always important to remember that if vegetables are boiled in water most of the calcium goes into the water; also that the skins of the vegetables often contain most of the lime and if they are peeled before cooking most of their value is lost. It is not difficult to learn how to increase the lime content of the food. The important thing is to remember that it must be done.

In more primitive conditions the diet was abundant or excessive in calcium. Now the diet of all civilized men is approaching the dangerpoint from reduction of calcium through the refinement of prepared foods and methods of cooking.

The care of the baby's mouth must not wait for the coming of the teeth, as every nurse knows. The mouth should be thoroughly cleansed every day with cotton swabs dipped

in boric acid solution. Infections often occur because of imperfect cleansing.

Baby's sore mouth, known as "thrush," is caused by the growth of a fungus of the yeast family (*Oidium albicans*). This growth may extend from the mouth to the stomach and bowels and become serious. There are several other kinds of infection common to the mouth of babies, but they can be prevented by cleanliness and in general yield to prompt treatment.

When Should the First Tooth Come?

"Baby has a tooth." You cannot tell when this signal will be flashed. According to the rules it should be at between seven and nine months. But there is a wide range among babies that are apparently perfectly normal. It is not very uncommon to hear of children born with a tooth. Tradition says that Julius Caesar was born with a tooth. Such an occurrence is unfortunate for the mother, and perhaps for the baby, for it may be necessary to either wean the baby or remove the tooth.

In the normal order the lower central incisor should be the first to appear, and in the development of the denture the lower teeth should slightly precede the upper. This is by no means always true and in many children, apparently perfectly normal, the upper central incisor comes first, the upper teeth precede the lower and still a normal denture develops.

The change of order is always suspicious and at least opens opportunities for perversion in the denture.

The incisors (the four front teeth), both upper and lower, usually follow each other in rapid succession, and in two or three months from the appearance of the first all are in place. The end of the first year will perhaps be about an average time for this stage.

There is great variation in the next tooth to appear, and usually there is an interval of two or three months. Apparently in the normal order the canine (eye tooth) should come next, but often the first baby molar comes before it. By the time he is a year and a half old, the baby usually has one molar on each side, or eight teeth in sight in each jaw. The last baby molar normally appears during the third year.

In the eruption of teeth, as in most phases of life, there is a rhythm in growth; that is, the tooth will seem to be coming very fast, then will stop, and then advance again. In forcing its way through the tissue it is literally true that the tooth has to bite the way through and the tissue it has to pierce is very tough. To bite and chew on hard things is the normal function. Every one who has watched a baby has noticed how quickly the tooth "grows" after its edge once cuts through. This is an indication of how great the resistance really is.

The baby wants and needs to bite and chew on anything hard it can get hold of. The fear of infection sometimes carries parents too far in the attempt to keep things out of the baby's mouth. The old-fashioned ivory ring with a ribbon tied to it is still an important help to the teething child.

The last of the baby teeth, the second temporary molars, should come through the gum at about two and a half years. They are much the largest and strongest of the baby teeth. They meet with greater resistance in forcing their way through the tissues and more often produce the general disturbances of teething.

Teething Troubles

The coming of the teeth is a perfectly normal process and in many cases makes no disturbance in the health and happiness of the child, but in other instances the appearance of each tooth is preceded by a period of irritability, digestive disturbance and even vomiting and fever.

If one studies the conditions in the baby's jaws and the processes that go on in the eruption of the teeth, the wonder is that these disturbances are not more universal and violent.

Each tooth is growing like an independent plant in its cavity or crypt in the bone. This growth produces pressure that forces back the surrounding bone and there must be as much pressure below as above. In fact, the wall of the crypt yields most where there is the least resistance. Normally the side toward the mouth gradually gives way and the sharp points of the tooth bite their way through the tough fibrous gum tissue. The pressure produced by the growth of the erupting tooth produces a feeling of discomfort that is relieved by intermittent pressure; hence the baby's desire to bite on hard things.

The bottom of the crypt for the lower temporary molars is very close to the trunk of the large inferior dental nerve and pressure often is produced upon this nerve. This is the source of the nervous disturbances.

Lancing the Gums

The old fashioned practice of lancing the gum was undoubtedly a good practice in cases in which it was indicated. It gives prompt and satisfactory relief when the pressure of the erupting tooth is the cause of the disturbance. When it is done, however, it should be done with knowledge and skill. The crown of the coming tooth should be reached with the lance and fully uncovered by two crossed incisions so as to relieve the resistance fully.

By the third birthday the baby denture should be complete, with ten teeth in each jaw. These teeth are usually white, even and beautiful. It should be remembered that they are to be used, at least some of them, for eight to ten years, and must be cared for. The usefulness and perfection of the permanent teeth depend upon it.

"Fitter Families for Future Firesides"

EMILY FERRIS

FIVE years ago those in charge of the Kansas Free Fair Association wanted a new health scheme for the fair and offered to Dr. Florence Brown Sherbon, then director of the division of child hygiene of the state board of health, a building and funds for some project.

Dr. Sherbon and Mrs. Mary Watts, who originated the Better Babies Contests at the Iowa state fair, had long since decided that merely examining the babies was not enough—that the baby's health depended on the family health, both present and past, and that merely scoring the baby did not really help much in solving the fundamental health problem.

So these two women conceived the idea of Fitter Families examinations, in which not only the baby but father, mother and all the brothers and sisters and any grandmothers, grandfathers, aunts, uncles and cousins who might care to come would have complete examinations and be scored according to their fitness as a family group as well as individually.

To arouse interest, Gov. Henry J. Allen agreed to give a silver loving cup to the Fittest Family and Senator Capper a medal to all grade "A" individuals. In addition, the state board of health decided to give a health certificate to each individual completing the examinations.

In the five years there have been ninety-five complete families examined, including 125 boys and ninety-two girls. Besides, there were many families which for various reasons did not finish all the examinations and so were not included in the final tabulations. There were also numerous individuals taken at their special requests.

Examinations are conducted by specialists who give their services without charge. Each has a small examining room of his own, and the individual is given careful attention. The examinations comprise complete structural measurements, physical examination of the vital organs, eye, ear, nose, throat, dental, nervous and mental, psychological, and such laboratory tests as blood pressure, hemoglobin blood test, Wassermann and urinalysis. The examinations are thorough and naturally sometimes tedious, lasting in all about three hours.

Since the contest is in no sense a clinic and only seemingly well individuals are admitted, it is surprising to note the number of defects—tonsils, teeth, skin, posture—that a person who considers himself quite well may be afflicted with but which usually may easily be remedied, once attention is drawn to them. No treatments whatever are given or advised (with the exception of corrective exercises); the individual is referred to his family physician. The final results recorded on the twelve original examination blanks are sent to the family with an advice sheet noting the especially good points in heredity and development and also the special weaknesses.

The Fittest Family is not put on exhibition, although the crowds come demanding to see the exhibit. The results of the rather detailed family history asked for show how very little the average family knows about its own ancestry beyond the mere facts of births and deaths recorded in the family Bible. When the whole procedure is finished, the family has a record of all the known history for three generations.

Of the entrants, the average age of the fathers was 36 years and of the mothers 33 years. The youngest father was 22 and the youngest mother 21 years. The oldest father, a college professor, was 64, and the oldest mother 48 years.

So the Jonses and the Davises are examined at the Eugenics Building while the Percherons and the Durocs are tested and graded down at the barns, and the interest in the results promises to become keener over human stock than over animal stock. This is as it should be.

Kansas started giving health examinations to entire families at its state fair five years ago. Since that time the Fitter Family project has been taken over by the national eugenics society and a special committee has been provided to promote it. Other states are taking up the project in connection with their annual fairs.

Caring for the Health of South African Miners

A. J. ORENSTEIN

THE gold mines of the Witwatersrand in the Transvaal produce over 50 per cent. of the world's output of gold; its value is approximately $200,000,000 a year. These mines employ some 200,000 natives (negroes) and 20,000 Europeans.

The group of mines with which I am connected employs some 10,000 Europeans and 85,000 natives.

In 1910 the mortality from disease among the native employees of this group was over 30 per 1,000. The mortality from pneumonia alone was 13 per 1,000.

In 1912 the late General W. C. Gorgas, accompanied by General R. E. Noble and the late Dr. S. T. Darling of the Rockefeller Foundation, visited the country on the invitation of the Transvaal Chamber of Mines, and after investigating the situation advised that certain prophylactic measures be instituted, the principal one being a reorganization of the housing conditions.

Separate Sleeping Bunks Provided

In 1914 the Central Mining Rand Mines group reorganized its sanitation and medical departments, appointing me as chief. The first steps taken were aimed at prevention of infection by intimate contact in the barrack rooms. It is, of course, a well established fact that close aggregation of many persons in barracks favors outbreaks of disease.

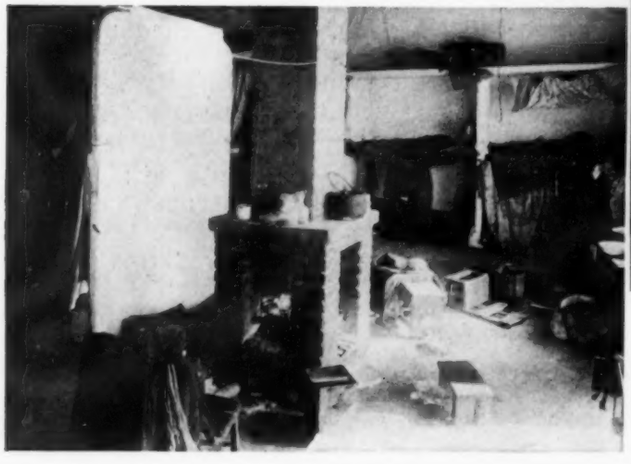
Owing to various local conditions, it is quite impossible to house the natives in any other way than in barracks, the individual rooms of which usually hold from 20 to 50 men. But by providing separated sleeping bunks, it was felt that a good deal could be done to prevent contact infection. A type of room was evolved in which the natives sleep on bunks arranged on the cubicle system, somewhat like the sleeping arrangements in the steerage of ocean liners.

Daily scrubbing and monthly disinfection of rooms and the whole of their contents, including the bedding and clothing, is now the practice. Garbage is incinerated daily, and fly breeding is attacked by every practicable means. Private disposal plants for water borne sewage have been installed wherever possible.

The water is subjected to periodical bacteriological examination, and any suspicious water, whether it be used for drinking or only for industrial purposes, is chlorinated.

Water and Food Supply Inspected

Rations are supplied by the employers. As they are peculiarly susceptible to scurvy, the ration is not only arranged to be well balanced from the nutrition point of view, but also to contain a sufficient amount of vitamins, especially the antiscorbutic vitamin. The antiscorbutic vitamin is provided by a generous daily ration of vegetables and germinated beans or peas; care is taken that these are not overcooked, thus destroying the vitamin.



From twenty to fifty men must sleep in a single barracks room at the gold mines of the Witwatersrand. When separate sleeping bunks were installed in the barracks, contagion was greatly cut down. An interior view of a barracks room is shown at the left; above is a corner of a hospital for natives.

Dancing competitions are one of the means taken by gold mine operators in the Transvaal to keep their native employees entertained. Here is a group of native dancers, with head dresses of ostrich feathers and shields of laced ox hide.

Ample bathing facilities are provided in the barracks, or compounds, as we call them. Showers only are used, in order to prevent infection, which might take place in plunge baths used daily by some thousands of semi-savages.

Try to Keep Native's Mind Off Drink

In the Transvaal the supplying of any drink containing more than 2 per cent. alcohol to a native or colored person is a crime punishable by a minimum of six months' imprisonment. Nevertheless, although many are jailed, liquor is easily obtainable by natives. To provide amusement within the compounds and thus counteract the lure of drink, the employers give free cinema shows and arrange native dances and games.

The natives are very fond of dancing, which with some races has reached a high standard of art. In these dances they portray the whole drama of the tribal life: the hunt, war, victory, defeat, love, supplication and thanksgiving, sickness and death. Dancing competitions are a weekly occurrence and cause as much excitement as any baseball match. They are also a fine form of physical exercise.

Before a native is engaged to work in the mines, he must undergo at least two physical examinations by medical men. Many undergo three. He is examined at the central distributing depot, where he and his belongings are disinfected; this is principally to prevent the introduction of typhus in the mines. Typhus is endemic and sometimes epidemic in several areas in South Africa, but no outbreak has ever occurred in our mines. He is again examined by a medical officer at the mine at which he is to be employed. Examinations are chiefly to learn if he has a sound chest, since tuberculosis is the foe we fear most of all.

Sometimes the natives undergo a preliminary medical examination near their homes, if a medical man can be obtained for this purpose.

Throughout his period of employment at the mine, each native is weighed monthly and a record of the weights kept. Should the weight of any individual drop five or more pounds, he is sent to the medical officer for examination.

On leaving the employ of any mine, the native is examined and is not discharged if medically unfit. If he suffers from miners' phthisis or tuberculosis, or from the effects of injury received in the course of employment, he is compensated.

The medical care of the natives in our group of mines is provided for by a complete hospital organization consisting of three central hospitals with a total installation of nearly 1,000 beds, and minor hospitals with another 1,000 beds. The central hospitals have very complete equipment, including powerful x-ray apparatus. In these hospitals we train native girls as nurses. The course of training lasts three years. Of course, only intelligent girls, who have had sufficient education to profit by the training, are employed.

"Boss-Boys" Study First Aid

Some 7,000 native employees of the more intelligent classes, what we call "boss-boys," are trained in first aid. They receive a course of demonstrations and are examined; if found proficient they receive a certificate of proficiency and a badge from the South African Red Cross Society. This qualifies them for extra "first aid" pay, and they receive a simple first aid outfit, which they carry about with them at their work.

Competitions in first aid are periodically arranged for native mine teams, and these are of great value in stimulating the interest of the natives—and Europeans—in this work. It is amazing to observe the efficiency of these natives in rendering first aid, especially when one recalls that very few of them can read or speak English, and that few of their instructors have an adequate knowledge of native languages.

In order to minimize the ill effects of injuries, it is our endeavor by means of educational propaganda—posters, cinemas and lectures—to impress on our employees the importance of immediate treatment of even trivial wounds.

To make the means for such treatment easily available, we have first aid packets carried by all European officials underground and by the boss-boys. In addition, there are available at several accessible places in each mine large first aid boxes, containing sufficient equipment to treat the more serious injuries, and stretchers, blankets and the like.

On emerging from work, every native is inspected for injuries as he passes the compound gate, and any injuries detected are promptly treated at the dressing station near the gate. A record is kept of all injuries dressed, whether underground or on the surface, and the cases are followed up.

Some idea of the magnitude of this work will be gained when I tell you that during the past year we issued from our manufacturing depot over 750,000 first aid dressings.

To my professional readers it may be of interest to learn the details of the technic of dressing minor injuries at the compound dressing station. The dressings are usually done by a trained native, sometimes by a European.

The dressers have strict orders to do only the following: Dress only minor cuts. Remove with forceps any superficially placed foreign bodies. Spray wound and edges with tincture of iodin. (This is kept in an atomizer). Next spray with carbolated oil (also kept in an atomizer). Apply dry sterile dressing from freshly opened packet. (These dressings consist of a piece of gauze, backed by cotton wool, wrapped in oiled paper and sterilized by steam. They are periodically examined for sterility.) Apply clean bandage. If in doubt send case to hospital.

We have found this routine rapid and foolproof. Allowing the dressers to use their discretion in the methods of treatment, was in our experience bad practice.

There is one disease with which the gold mines of the Witwatersrand are associated in the minds of persons interested in mine hygiene —silicosis or miners' phthisis. Because of the very high free silica content of our rock, silicosis has taken a very large toll among our miners, especially Europeans, and is still far from being conquered.

The principal methods of prevention are wet-drilling and adequate dilution of the dust by ventilation. Wet-drilling is the universal practice in our mines, enforced by stringent government regulations. Adequate ventilation is a very difficult matter to introduce in many of our older mines, particularly those with very extensive underground workings. However, progress is being made, perhaps not as rapidly as one would wish, but nevertheless steadily and surely.

At our institute for medical research we have a competent worker engaged solely on the study of the pathology of silicosis, and much light has been thrown by him on the obscure phases of this dread disease. Our technical societies devote much time to the discussion of the problems of its prevention, and our technical officials constantly experiment in various directions. We are optimistic enough to believe, despite our slow progress, that we will win the fight.

Much time and effort, and much money, are being spent on disease prevention at our mines. What have we to show for it? These few figures apply to our native force:

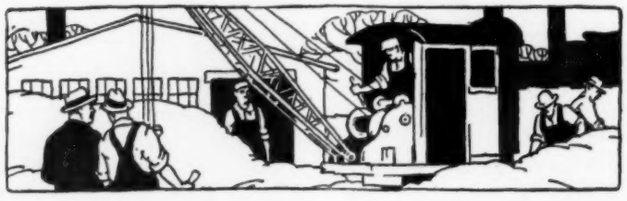
In 1910 the mortality from disease was 32 per 1,000.

In 1924 it was 10.8 per 1,000, and it has been as low as 8.6.

In 1910 the mortality from pulmonary tuberculosis was 4 per 1,000; in 1924, 0.62 per 1,000. In 1910 the mortality from pneumonia was 13 per 1,000; in 1924, 4 per 1,000. This last year was a bad one; we have had it as low as 1.4 per 1,000.

Scurvy, which accounted for a score or more of deaths a year and for a great deal of incapacity, has ceased to figure as a cause of death, and causes but a fraction of the incapacity of a few years ago. The accident mortality rate has been cut in half since 1910.

We are all quite certain that in our case hygiene and medical organization have been and are good business propositions



Flies

MAZYCK P. RAVENEL

THE house fly is one of the dirtiest and most disgusting of insects. Its name is misleading. Howard proposed to call it the "typhoid" fly, which at once would warn the unwary of its potentialities for harm. Sir John Lubbock described it as "A winged sponge flying hither and thither to fulfil the foul behests of Contagion," and Woods Hutchison has called it "the joy automobile of the germ."

The body, legs and feet of the fly are peculiarly well fitted to carry filth and germs. They are covered with hairs and bristles and, in addition, the feet have terminal claws and adhesive pads covered with a sticky substance which enables the insect to maintain its foothold when upside down.

The female fly lays 120 eggs at one time, each one twenty-fifth of an inch long. The egg hatches within twenty-four hours into a maggot, a worm-like creature a fraction of an inch in length and glistening white. It burrows quickly into the substance on which the eggs were laid. During growth, which is rapid, it molts or changes its skin twice, finally reaching about one half inch in length. This stage requires four to eight days, and towards the end, the larva comes to rest an inch or more below the surface of the ground near its feeding place. The skin hardens, contracts and becomes dark, forming the pupa-case, or chrysalis, in which the future fly develops to full size, emerging in from five to seven days.

Each of these stages may be shortened or lengthened by favorable or unfavorable conditions of moisture and temperature, so that under adverse circumstances the emergence of the fly may be delayed as long as three months. Within one or two hours after emerging from the pupa case, the fly takes wing. Sexual maturity is reached in ten to fourteen days, and four days after mating the female deposits her eggs. The eggs produce male and female insects in about equal numbers. Under the most favorable conditions, and taking nine generations as the average for a season, it is possible for a single female to have a number of descendants represented by five followed by twenty-nine naughts. Fortunately this does not occur in nature, but it is easy to understand the veritable plague of flies frequently observed during the summer months. The eggs are deposited by preference in horse manure, which in addition to containing predigested protein has the advantage of not caking, but when this is not available human excreta, cow dung, or almost any fermenting organic matter may serve—even damp rags or paper. As many as 685 larvae have been counted in one pound of manure.

The House Fly

Never wipes its feet.

Therefore, brings filth to your food and to you.

This filth is loaded with germs.

These germs communicate disease to you.

In the body of a single fly 6,000,000 germs have been found.

A few flies in spring will multiply to many million in summer.

Flies live in dirt, filth and manure—therefore, no filth, no flies.

How the Fly Feeds

Since the pupa does not feed, the fly emerges hungry, and when food is found gorges itself up to 70 per cent. of its weight. Its food habits depend on its powers of digestion, or rather lack of certain powers. It must have soluble carbohydrates or predigested protein, one found in the kitchen or dining room, the other in excreta, hence the alternate visits from one place to the other. The same necessity determines largely the selection of manure for the deposit of eggs.

Flies gorge themselves in less than a minute if the food is liquid. The food passes first into the crop, which is of such a size that it may contain food enough for several days. The fly often continues to feed after the crop is full, the food then going directly into the stomach and intestine. If undisturbed the food is regurgitated from the crop through the proboscis, being repeatedly drawn in and out with apparent enjoyment. This regurgitated material is often left, especially if the fly is disturbed, and forms one kind of fly speck. Flies often feed on the saliva of other flies. When given sugar or partly dry food it is moistened with saliva and then sucked dry. Well fed flies deposit excreta about every five minutes. Fed once and then confined they deposit an average of thirty-one specks per fly in twenty-four hours, the great majority of which are regurgitated material.

Germs are carried on the body, wings, legs, and feet, as well as in the saliva and excreta. After feeding known germs they may be

recovered from the intestine for four to five days, and occasionally longer. Flies from swill barrels may carry more than 6,000,000 germs each, of which 1,600,000 may be intestinal forms. Those feeding at sewer outfalls of cities may carry 600,000 intestinal germs each, cow-stable flies 420,000, pig-pen flies 923,000, while those confined to dwelling houses may have as low as 47,000 each.

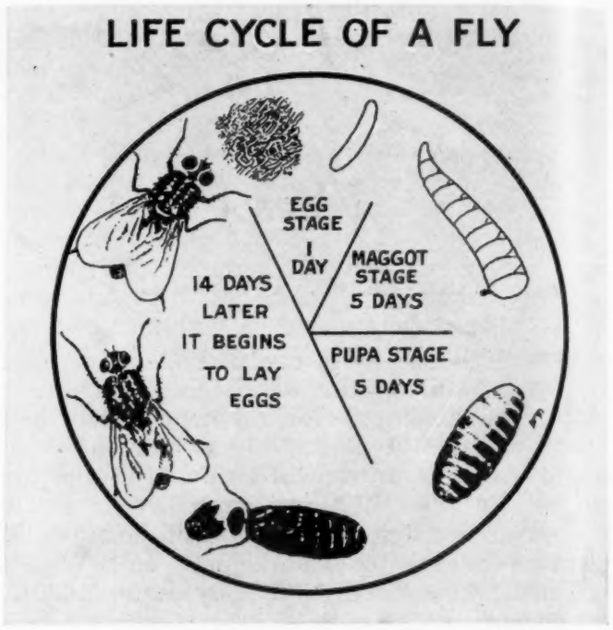
Disease Carried by Flies

The first instance in which flies were shown to have spread disease was during the Spanish-American War in 1898, when Reed, Vaughan and Shakespeare showed that certain epidemics of typhoid fever in our camps were spread by these insects. Numerous studies since that time have given additional proof, not only as to typhoid fever, but also for diarrhea, dysentery, cholera, and probably other diseases.

An investigation by the New York Association for Improving the Condition of the Poor extending over several years showed that almost one and a half times as many babies exposed to flies suffered from diarrhea as among those protected from flies. Dirty homes and flies go together, and this combination gave more than double the number of diarrheal diseases in babies found in clean homes.

Flies survive the winter by hibernation, hence the importance of killing those appearing in the early spring.

Approximately 85 of every 100 flies found in houses are house-flies. Next in numbers is the lesser house-fly. In some country houses the stable fly may occur in large numbers. It has been charged with spreading infantile paralysis, but this is at least unproved. Blow-flies (blue-bottle) and green-bottle flies may also be found. These have a peculiar interest from the fact that their eggs may hatch with extreme rapidity. There are many biting and blood-sucking flies of interest. In this country we have many horse-flies and cow-flies, some of which are known to carry disease, such as anthrax. In Africa another genus of flies is known to carry sleeping sickness, a human disease, and a number of animal diseases due to the same type of parasite. The multiplication of flies is best prevented



by seeing that places and materials suitable for the deposit and hatching of eggs are not provided. Horse manure especially should be kept in fly-tight cement bins. Rapid drying of manure will also prevent hatching of eggs and development of larvae. Destruction by burning is used in armies, but is wasteful. Remembering the time required for development, it is evident that removal of manure followed by deep burial, drying or other treatment once a week will prevent the breeding of flies. The same principles apply to other organic waste in which flies breed. Destruction of adult insects by swatting, trapping, sticky paper and poison must be vigorously carried on. All dwelling houses must be fitted with wire screens, and it is well to have them on stables and other animal houses. Cleanliness is the watchword.

Poisons containing arsenic are dangerous to use, especially if there are children. Among poisons which are safe and efficient are salicylate of soda and formalin, 3 teaspoonfuls of either to a pint of sweetened water. Both castor and croton oil are excellent fly poisons. Very stale milk and decomposing meat and blood are attractive baits to use as the poison conveyor.

Sunnyside Farm of Health and Happiness

HETTY LOVEJOY SORDEN

"WHO knows where the birds go in the winter time?" a teacher in one of New York City's schools asked her class.

One small boy knew. Without a second's hesitation, he waved his hand ecstatically and blurted forth the joyous secret.

"To Sunnyside!"

Sunnyside Farm is an ordinary little cottage, none too imposing of architecture or furnishings. But it is cradled in the Catskills, in a great tuberculosis cure country. It looks out over those hills toward which so many seekers of health turn for strength to combat the great white plague. It has two long sleeping porches through which kind, healing mountain winds blow.

Sunnyside is a children's tuberculosis preventorium. Here, for twelve summer weeks out of every year, twenty-five underweight children of poverty stricken city families eat wholesome food the like of which they have never before tasted, play and sleep long hours out of doors, and put on tints of healthy coloring and pounds upon pounds of healthy weight.

The real Sunnyside Farm is an idyll, not an inadequate, outworn building. It is one of those splendid services that sometimes grow out of suffering. It is the rare promise of health held out to children on the verge of losing it, by adults who have once seen it slipping from their own grasp.

The late Dr. Herbert Maxon King, physician-in-chief at Loomis Sanatorium for Tuberculosis, planted the seed from which the Sunnyside idea has grown. He believed that every man and woman cured of tuberculosis has a missionary debt to perform in helping to save others from the ravages of this disease. His noble creed inspired, among others, Miss Nettie I. Miller, a New York school teacher. After two years of fighting tuberculosis under his expert care, she was once again able to leave the mountains and return to her profession in the city. But instead of going back to an inside classroom, Miss Miller, still under the department of education, undertook the teaching of health and the three R's for nine months each year to the drooping children on the Bellevue boat day camp school. This was one way she saw of protecting others against the malady she had suffered and conquered.

Teacher Was Originator

But because this had become her business in life and her way of earning a livelihood, Miss Miller felt that there must be some further service that she could render without personal benefit in the cause against tuberculosis. One day she heard a school physician bemoaning the fact that those underweight children of the day camps and of New York clinics lose in their tenement homes in the summer most of the gains they make during the winter months. Instantly, she caught the vision of a Sunnyside Farm which would complete for such children the year's cycle of health care.

On July 1, 1913, Sunnyside Farm opened to receive twenty-five malnourished, underweight

Simple pleasures in the old orchard at Sunnyside Farm in the Catskills make the days pass swiftly for the children in the tuberculosis preventorium there.

Photos by Brown Bros.

Appetizing meals help to keep the children at Sunnyside Farm plump and contented during their summer stay. There is a great rivalry in gaining pounds.

Scrubbing and toothbrushing invariably precede going to bed. Older girls supervise the ablutions of the younger children.

children, all giving evidence of tuberculous infection. They were gathered from among the frailest of the day camp and clinic children of New York City. From that day on, for twelve weeks every summer, Sunnyside Farm has brought the blessing of health closer to twenty-five such boys and girls between the ages of five and thirteen years. Its wonderful achievements have been made possible because Miss Miller gives her entire summer vacation, her talents and her generous service, without remuneration, to the management of Sunnyside, and because its board of directors, especially its treasurer, Thomas F. Woodlock, and interested friends from year to year inspire the work and subscribe the budget for rent, food and staff.

To its young summer visitors, Sunnyside Farm symbolizes a life abundant. Children who have never before sat down to a full meal find their dinner table laden with wholesome food prepared so temptingly that it could well elicit congratulations from a king.

Children who at best had for a garden some straggly potted plant that stifled on a city fire escape play all day in an elysium of thirty green acres.

At night, those whose only bed at home is a third or fourth portion of one, or perhaps a pile of rags in a stuffy corner, dream their dreams in a fresh, comfortable cot on the sleeping porch, close to the starry sky.

Regular sanatorium care is given to each child resident at Sunnyside. Physicians from the Loomis Sanatorium gladly give their services without charge. Each boy or girl receives a careful physical examination at the beginning and end of the summer and thorough medical attention all through the season, whenever occasion arises. A trained nurse and a practical nurse assistant are on duty or on call, twenty-four hours a day. They give the regular tub baths and supervise the morning and evening sponges and tooth-brushing. They serve every meal so that they can know intimately the condition of each child's appetite. They make sure that each child has regular normal bowel movements. At night, they sleep near the children, one on each sleeping porch.

All Strive to Gain Weight

For every child, every day at Sunnyside is one joyous round of healthy pleasure. A quarter of seven is getting up time. Breakfast at quarter after seven consists of fruit, cooked cereal, whole wheat bread and butter, an egg and milk. After breakfast, the older girls clear the table, help with the dishes and make the beds. From nine until twelve, the children are out in the orchard under the care of a playleader. Games, songs, sewing, basketry and a daily dozen to the music of the phonograph make each morning pass on glad wings. Those children who are making the least gains in weight drink a cup of milk, and the other children have a glass of water at ten o'clock and again at three.

The bountiful noon dinner is such a meal as Oliver Twist once anticipated, only to be disappointed. It is an occasion for "more," where plates heaped with delectable foods are cleared and ungrudgingly filled again. Second helpings are encouraged and are almost as universal as first ones. A second serving of meat and vegetables, a second cup of milk and, even a repetition of dessert, await one for the asking.

For those who may be inclined to loiter over the food, the nurse's crisp voice tactfully recalls them to the business of eating and growing well and strong.

"Children, isn't it splendid that Margaret has gained four pounds in the last two weeks?" she

asks. "That is because she eats so well. If you want to gain weight, you have to eat well, don't you? Who will have a second cup of milk?" On the wave of a universal desire to gain another pound, the milk pitcher is emptied and is sent out to be refilled.

Fifty quarts of the best milk a day (for twenty-five children and five adults), fifteen to eighteen pounds of the best butter and thirty dozen fresh eggs every week are used in the Sunnyside family. There is every evidence of collusion between the Sunnyside larder and the bathroom scales.

Dinner is followed by a rest period until quarter of three. Each child lies quietly on his bed for the entire time and most of the children sleep soundly. After rest comes free playtime, supper, more out of door play and bed by eight o'clock.

Every other week brings its weigh night. The story that the bathroom scale tells is more fascinating than any of the stories told in the orchard at Sunnyside. After the bed time washing and brushing of teeth, each child in the nightgowned processional waits for his turn on the scale. Excited and congratulatory "ahs" attend every announcement of the individual gains. For the first six weeks of her stay last summer, one girl of thirteen gained fourteen pounds and thirteen ounces. Her rival gainer showed an increase of twelve pounds eleven ounces. After six weeks of Sunnyside care for sixteen children of the group and five weeks for the remainder, the group gain on August 4, 1924, was 135 lbs. 10 oz., an average of over 5½ lbs. for twenty-four children. The twenty-fifth child, five years old, who came late, had gained one pound fourteen ounces in two weeks.

Sunnyside Farm represents the victory of idealism over cold practicalities. Material obstacles vanish before the force of the determination of Miss Miller and friends of Sunnyside to make its inadequate equipment serve a noble end until a new building fund shall have been subscribed.

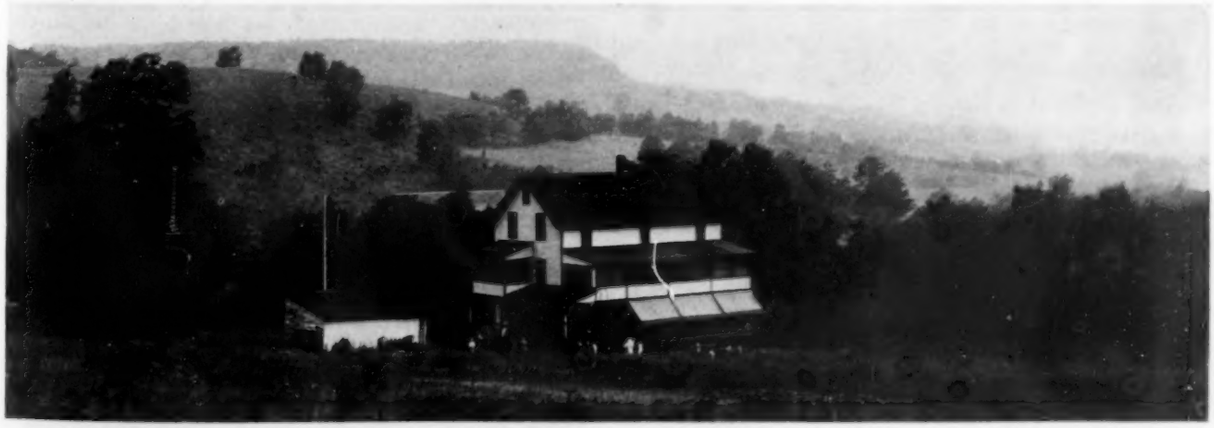
In a house of health, one can scarcely conceive of but one bathroom for twenty-five children receiving sanatorium care, and for five adults. Yet the single bath at Sunnyside works overtime and on a schedule that permits the entire household to keep clean and comfortable. The two dressing rooms, the only indoor space available for the children, with their benches and individual wash basins, towels, tooth-brush mugs and waste pails, supplement in good spirit the deficiencies of the bath. Tiers of small compartments serve for combination bureaus and wardrobes.

In these dressing rooms, there are no separate accommodations, except an adjustable screen partition, to separate the boys from the girls. A wholesome lack of self-consciousness on the part of the children, the unobtrusive supervision of the nurses in the dressing room and their constant presence through the night robs the situation of any dangers which might result from the unavoidable intimacy of the living quarters.

Nevertheless, in the dreams of the friends of Sunnyside, all of these makeshifts are banished in a spacious new building, generously provided with every convenience and allowing every privacy. When the building fund is complete and the architect's paper plans are realized in brick and mortar, Miss Miller hopes to care for 100 tuberculous children, not only in summer, but all the year round, for as long as it may be necessary.

Any picture of Sunnyside Farm would be incomplete which does not show in the background those patients at Loomis Sanatorium whose joy it is to lighten the financial burdens of Sunnyside and to make even sunnier the days of the children getting cured there before the disease has taken a firm grip on them.

No wonder that after three glorious months of such loving service, of such wise care, those privileged child residents of Sunnyside leave with memories that are like the sweet taste of a perpetual summer.



Sunnyside Farm is cradled in the Catskills, where may famous tuberculosis cures have been made.

Shall I Fear an Anesthetic?

FLOYD TROUTMAN ROMBERGER

"DOCTOR, I am not afraid of the operation, but I do hate to take an anesthetic." Hundreds of times the physician hears this remark. Hundreds of times, when the surgery is actually performed, conditions are disclosed which, had they been taken earlier, could easily have been permanently cured. Owing to delay, these conditions often are so advanced that anything beyond temporary relief is impossible. A permanent cure has been sacrificed because the person feared to chance an anesthetic.

Now, what are the chances? With the more common anesthetic agents, statistical facts are available. With chloroform we find the death rate estimated as being one in 3,000 by one authority, while another collection of records discloses it as one in 2,665. Chloroform was developed in England to match the discovery of the anesthetic use of ether in the United States and it is more freely used there than in this country. Though it is a worthy drug when properly used in its place, it has largely fallen into disuse in our hospitals.

Concerning ether, widely used here, Dr. Keen has compiled records of 262,002 administrations with a death rate of one in 7,705; a still larger collection of cases, 864,163 records, shows a rate of one in 8,010.

With nitrous oxid-oxygen anesthesia, the so-called laughing gas, Dr. Hewitt could find only thirty deaths in a search of the records in the literature over a period of forty years. Dr. Teeter, a dentist, collected reports totaling 1,161,820 administrations with but two deaths. Dr. Buxton reports a compilation of 1,001,000 cases with but one death. Dr. Gwathmey most conservatively estimates the rate in major surgery as being one in 20,000.

Risk Not So Great as Crossing Street

These are not selected cases or reports; they are the records of all classes of surgical risks just as they presented themselves for surgery. That even this rate is not due to the breathing or inhalation of the anesthetic vapors, but rather to the condition of the patient can be shown by a study of the death rate for surgery performed under local or regional anesthetic agents. Even when local anesthesia only is used, patients sometimes die from their abnormal condition.

From these figures you may see that the risk from the anesthetic itself is not great. Every time you cross a busy street you are taking greater chances. Every time you take a swim in the lake you are assuming a certain figurable hazard. There is really no risk from the anesthetic in a normal individual; the only conceivable cause of fatality would be overdosage or improper administration.

To be sure you should use care in the selection of the one who is to give you the anesthetic. You should be just as selective of your anesthetist as you are of your surgeon. His experience and his judgment must be your safeguard. Every minute—yes, every second—he is watching your pulse, your respiration, your color, your blood pressure, and many other factors.

A physician with special skill and training can do this best for you, it is generally believed. His judgment is apt to be more ripe, his understanding of your physiology and pathology more mature. If an orderly or a nurse gives the anesthetic, then the surgeon must direct; he assumes double duty.

You can well marvel at the organization of the modern operating team—the special skill in administering the anesthetic, the highly trained surgical nurses, the surgeon and his assistants accustomed to working together, each teammate anticipating the other's next move. All this is done for your safety.

It is natural for you to fear the unknown, but anesthesia is a mental hazard only. Anesthetic sleep is just like natural sleep, only deeper. You feel no pain, your reflexes are abolished. If you can compose your mind and go to sleep just as if you were taking a nap on the couch at home, the experience will be pleasant rather than unpleasant.

A close friend once said to me, following an anesthetic, "Doctor, I just went off to sleep so easy, as if you held to my face a bouquet of sweet-smelling flowers." It was a beautiful tribute, and it made me feel as though there is really some appreciation in this world.

Children Usually Easy to Put to Sleep

Children who have been reared by the boogy-boo-man method are very difficult to anesthetize. They cry about everything and are afraid of everything; they must be restrained. One can very often tell what the home training has been by the way a child takes the anesthetic.

Usually, however, children are easily interested in their surroundings and it is pleasant to work with them. Their attention is attracted

by talk about their name, their age, or about their school. The Sandman tells them stories, and how intently they sometimes listen, as they drowsily drop off to sleep. Peter Rabbit, Towser the Hound, Johnny Skunk, and Jimmy Crow, all are interesting characters, very much alive to them. Many times after their recovery they will ask the nurse to have the story finished. Thus quietly to induce anesthetic sleep is an art, the aim of every anesthetist. If it has been done pleasantly children always remember it as such, and never have a fear of it again should occasion require. On the other hand, if they are terrorized they never forget it, and they carry that fear on into adult life. The next anesthetist who meets them has indeed a task on hand.

Somewhat older children often ask, "Aren't you going to give me something to smell, so that it wont's hurt?" Here the parents have laid the foundation for easy anesthetic sleep. One little girl of 4 years to whom I was telling a story about a big, big monkey—already half asleep—said, "Well, cut out this monkey business, and—" but before she could finish she had dropped into the land of forgetfulness.

Adults are but children grown up, and a varying array of conditions must be met. Some have had hospital experience, others not; some have every confidence, others must have it instilled.

The hardest adults to anesthetize are those who are afraid. Some really approach this phase of their surgery with real terror in their hearts. A sense of responsibility hits the anesthetist like a blow in the face when his patient says, "Doctor, I'm afraid; are you sure I'll wake up?" It takes a great deal of calmness and assurance for him not to become panicky when the patient says, "I know this will kill me; I'll never awaken again." Who is so omnipotent as to be able to answer? One needs special care in these cases; their feeling of abnegation starts both the anesthetist and surgeon with a handicap.

Results Better if You Don't Resist

Many patients will say, "Be sure I'm deep enough," or, "don't let them begin until I'm sound asleep." While this is superfluous advice, it indicates a composed state of mind and they usually sleep easily.

Persons who have suffered long and are praying for relief welcome the anesthetic as the shortest means of getting well. They are easily anesthetized.

The patient in whom it is possible to induce sleep easily requires less anesthetic to carry him all the way through his operation. He recovers more quickly from its effect; suffers the least, and has the best chance of getting well. Hence no measures are overlooked which might possibly aid in this ease of inducing anesthetic sleep.

You are usually given a small opiate, hypodermically, before coming to the operating room. This itself makes you somewhat drowsy and helps your peace of mind; your sensibilities are less acute. The anesthetist will chat a word with you, arrange for your comfortable position, raise or lower your head that you may breath easily, scratch your nose if it itches, and give you other small attentions. Meanwhile he has taken your pulse, read the findings on your chart and history, listened to your heart, taken your blood pressure if it is unrecorded; and, most important, he has given you a close, general appraisal. He balances in his mind the elements of risk and weighs them with what he knows you must pass through while you are under his care.

When you are made comfortable on the table all you need do is to breathe quietly and easily as in natural sleep. Under modern methods, in from 45 to 90 seconds you—are——off———to ————sleep.

It is really an interesting experience and can become fascinating. I admit it has a peculiar appeal to me. I have been anesthetized by others and have put myself to sleep many times just to see how it could be done easily and to catalogue the effect for others.

An amusing incident occurred one time when I was trying to see just exactly how many breaths of nitrous oxid (laughing gas) I could take before becoming unconscious. I was trying to take enough so that I would lose consciousness just one second after turning off the valve. I was sitting at the head of the table waiting for a patient to be brought upstairs, mask on my face and hand on the gas valve.

After five or six breaths—this happened more quickly than it takes time to tell—I thought to myself, "Now I'll take one more breath and then shut off the valve and take a little snooze." But I forgot to turn off the valve—I had lost consciousness and the power to move my hand—and I woke up a minute later on the floor.

The nurses told me afterward that I fell off my stool, hit my head on the radiator, then hit the floor with a smile on my face. Of course the mask dropped from my hand, I began to breathe air, and in a minute I was awake none the worse for the experience, except the bump on the head, which I did not feel.

The effect of this anesthetic agent is so fleeting that I suffered no ill effect at all; in fact, five minutes later the patient was brought in and I administered the anesthetic for a major operation. But I was a little wiser.

Talking in Sleep Largely Myth

Some persons dread the anesthetic because they fear they will talk in their sleep. This is largely a myth. Under modern methods of inducing anesthetic sleep, consciousness is lost so rapidly that they don't have time to say anything. When they are coming to they usually are so drowsy that they don't care to talk.

In all my experience I have never heard any remarks like the highly colored tales which some people take delight in relating about what they said when under the anesthetic. My appreciation of vaudeville is not dimmed, yet I have to pay fifty cents to hear it just the same as everybody else.

Some patients say, "Don't strap me down," under the erroneous belief that they will be held or restrained. This is never done, except as a guard for your own safety. Fortunately, since the prominence of Mr. Volstead, we rarely encounter the old-time booze-fighter.

Your arms are placed in short linen sleeves at the side of the table, not so much to restrain you as to keep them off your chest so that you may breathe more easily; and so that they do not hang over the edge of the table when you relax in sleep, causing a pressure paralysis. After you first loose consciousness a heavy web is passed over your knees, for your own safety. In your own bed, you often turn over in your sleep; the same thing could happen on the operating table during the early part of your anesthetic.

Your Sleep Is Safeguarded

Every minute, every second, of your anesthetic sleep is safeguarded. During the operation you are watched by the anesthetist; following it, until you have fully recovered consciousness, by an efficient and specially trained nurse.

"Why, then," you ask, "do patients sometimes die during or after their operations?" They sometimes die because of disease, mode of living, neglect, delay. Perhaps it is due to no preventable factors, either in mode of living, or in the care of the physician.

For example, you may not know that provident, prodigal nature placed in your body seven times as much secreting kidney substance as is needed to sustain life. However, not many reach middle life or advanced years without having some of this placed out of commission. Every acute cold, every attack of tonsillitis, scarlet fever, rheumatism, and many other common diseases, takes toll. Perhaps infected teeth or tonsils have helped. Overeating or overdrinking may have aided in kidney destruction. Many persons who come to have an operation find that their kidney efficiency is very low.

In the heart, too, nature has given you a big reserve, but you may have used up part of it. Perhaps the blood pressure is high, indicating that you have been firing the boiler too hard and running under too great a head of steam.

Similarily, every vital function of the body must be evaluated before surgical treatment. Many times the surgeon and anesthetist are forced to work on an extremely narrow margin. While under surgery, you are being tested like an athlete in the race, and condition will tell the story.

Post-operatively many uncontrollable factors are encountered. Persons apparently in good health are known to have died at home in bed from heart failure or apoplexy. But let this occur in the hospital and, if an operation had been performed, it will surely be blamed. Persons completely well contract influenza and pneumonia; those sick in the hospital may do the same; yet, in the latter case, if an anesthetic had been administered, it is likely to receive the blame.

Patients under an anesthetic perspire profusely, but they are very closely guarded against drafts and always are wrapped in hot woolen blankets when moved from the operating room to their bed. In anesthetic sleep the muscles are relaxed, the skin is relaxed, the pores are open, the vaso-motor tension is lowered as the operation proceeds, hence the patient perspires.

Your surgeon and anesthetist know all these facts and they weigh them carefully, along with many other factors, so that additional safeguards may be thrown around you. Veritably, your life depends on their judgment, so there is reason for their careful selection; once you have chosen them, place your confidence in them.

Would You Like to Be Without Anesthetics?

Can you picture to yourself what surgery was like a century ago? The art of anesthesia has been developed in the last eighty years. All the anesthetic agents have been discovered since that time, and notable advances in their administration have been made in the past decade.

Who can say how much of the progress which has been made in surgery, even up to the present day, has been due to highly developed anesthesia? They are very intimately associated.

In former days many people died from disease conditions that we now call quite simple, and that can be simply and absolutely cured, owing to the advances in the art of anesthesia.

Now, do you still fear the anesthetic? Don't! It is your friend in need. It eases the pathway to a cure. Simply follow the psalmist, as he says, "I will both lay me down in peace, and sleep."

Simple Facts about Cancer of the Stomach

JULIUS FRIEDENWALD

THE stomach more frequently than any other organ of the body is the seat of cancer. Recent estimates show that from 40 to 45 per cent. of all cases of cancer are cancer of the stomach.

Moreover, authorities generally agree that cancer of the stomach is increasing. The extent of this increase is difficult to determine accurately, for recent great advances in the detection of the disease make it more frequently recognized than it used to be. Too, on account of the reduction in the death rate from diseases of childhood, such as diphtheria, and from diseases of adult life, such as tuberculosis, this increase may be in a measure relative.

In men, according to Kolb's statistics, cancer of the upper portion of the digestive system (lips, mouth, tongue, salivary glands and esophagus) makes up 13 per cent. of the cases, and cancer of the lower portion (stomach to rectum) makes up 71.5 per cent. of all cases.

In women the upper portion of the digestive system is the seat of only 3.9 per cent. of the cancers, the lower portion of 49.5 per cent. Cancer of the breast is frequent among women and it accounts for 29.4 per cent. of the cases; the cancer of the other organs peculiar to the sex accounts for 10.8 per cent.

Where Cancer Is Located

The location of cancer in 981 fatal cases of the disease that were reported in Baltimore in 1923 was as follows:

	Male	Female
Cancer of the mouth	28	5
Cancer of stomach and liver	208	169
Cancer of rectum, intestines and peritoneum	60	68
Cancer of female genital organs		130
Cancer of breast	2	96
Cancer of the skin	8	8
Cancer of other organs	145	54
Total	451	530

Persons between the ages of 40 and 60 are most liable to the disease, the greatest number of cases occurring between the fiftieth and sixtieth years. Men seem more susceptible than women, the proportion of cases being 59 per cent. in males and 41 per cent. in females. Gastric cancer is more frequent among the white than among the colored races.

Heredity plays a rôle in the development of this affection, some persons believe. The fact that cancer often occurs among members of the same family may be a matter of coincidence, however, for this affection is a very common one.

On the other hand, from the very interesting series of experiments made by Miss Maude Slye on mice, Wells has arrived at the conclusion that there is a relation between hereditary influences and cancer occurrence, and that even in man the susceptibility to cancer occurs as an inherited recessive character. According to my own studies a hereditary history of cancer in various portions of the body appeared in 10 per cent. of cases of cancer of the stomach.

Excesses of food and drink appear to have some bearing in the development of the disease. A history of former indiscretions in diet was found in 32 per cent. of cases, and a history of alcoholism in 15 per cent. The ingestion of too hot foods, some writers believe, predisposes to cancer of the stomach.

Reducing the Cancer Death Rate

How can we reduce the death rate from this cause? Reduction in the death rate from cancer of the stomach can be accomplished only by an early recognition of the disease so that surgical treatment, the only known means of cure, can be undertaken before the growth has assumed any marked proportions. Unless the diagnosis of this disease is made early, the result of such operation can only be relief and not cure.

While the diagnosis of cancer of the stomach is exceedingly simple when the disease is fully developed, in its beginning stage nothing is more difficult to detect. The earlier the stage of the growth, the less positive are its manifestations. Even though the disease may have assumed considerable proportions, many of the most important symptoms may be lacking, so that even at this stage a correct diagnosis may at times be impossible.

If one analyzes a series of cases of gastric cancer, one finds that the persons developing it are not as a rule chronic dyspeptics and, excepting in those instances in which the disease has developed from a previous gastric ulcer, have usually been in good health with a normal digestion until the onset of this disorder.

This fact is well illustrated in my own cases, in which there was a history of some digestive trouble in but 23 per cent., 7 per cent. of which gave direct histories of previous gastric ulcer, while in 77 per cent. of these cases, the onset was sudden and acute. Sudden onset, then, is a fact of great value in the early diagnosis of this disorder.

Some Symptoms of Gastric Cancer

The most important signs of the disease to which a person's attention is apt to be attracted are:

1. *Loss of Appetite.*—This is a prominent symptom of cancer of the stomach, and was present in 89 per cent. of the cases studied. It varies from a slight loss of appetite to an absolute aversion to food. It is usually a very early symptom, but is present in so many conditions that unless it is taken in connection with other signs it is of little significance. The aversion to meat, which frequently occurs early in the disease, is of some diagnostic importance.

2. *Vomiting.*—This is also of frequent occurrence in gastric cancer, appearing in 89 per cent. of the cases. While this sign is exceedingly frequent, it bears such a slight relationship to the taking of food that it can be accorded only minor importance in diagnosis, unless taken in connection with other signs of the disease.

3. *Pain.*—This was present in 93 per cent. of the cases. It appeared as an early sign in 84 per cent., but was most variable as to the location and extent, and on this account its significance as an early sign of gastric cancer is lessened.

4. *Bleeding from the Stomach.*—This appeared in 22 per cent. of the cancer cases. In the greater proportion of cases there were a number of hemorrhages. The hemorrhages are usually small and most frequently present a "coffee ground" appearance, a change produced by the action of the acid in the gastric secretion on the blood. They appeared as an early sign in but 25 per cent. of the cases, and as a late sign in 75 per cent. Since bleeding from the stomach appears early in only a small proportion of cases, this sign only rarely can be relied on as an early sign of this disease. When it does occur, especially in the coffee ground form, it presents additional evidence in the diagnosis.

5. *Passage of Blood through the Bowels.*—This occurs in cancer of the stomach, but is less frequent than bleeding from the stomach. It rarely appears in the form of red blood, but usually as a black or tar colored discharge, owing to the change that it undergoes in its passage through the bowel. It appears only in a small proportion of cases as an early sign (14 per cent.) and cannot therefore be relied on in the early diagnosis of this disease.

6. *Difficulty in Swallowing Food.*—This condition existed in 7 per cent. of the cases studied; those cases in which the growth involved the passage into the stomach. It appeared as an early sign in 78 per cent. of these cases and, according to my experience, when present in patients over 40 years of age is a sign of great significance.

7. *Loss of Flesh.*—Loss of weight is a sign of great value. It occurred in 98 per cent. of the cases; in these there was a loss of flesh of from 5 to 78 pounds. In persons over 40 years of age affected with indigestion, this sign should at once attract attention to the possibility of gastric cancer.

In addition to those signs already described, which the patient usually observes himself, there are others of even greater significance in diagnosis. These can usually be discovered only by means of a thorough examination. Among them are the detection of the tumor by feeling the abdomen, certain findings indicating the presence of an obstruction at the outlet of the stomach, the x-ray picture, and the alteration in the stomach contents.

But even these signs are not usually present as early evidences of cancer of the stomach, and many of them are simply general manifestations and not characteristic of this condition alone. Those that are more characteristic are usually late developments. On this account the late diagnosis of cancer is rendered exceedingly simple, while early diagnosis is difficult.

Every person over 40 years of age who is suddenly attacked with indigestion that does not disappear after a brief period of careful dieting should consider the possibility of cancer and should seek medical advice. If, after a short course of medical treatment, no improvement is noted, and other conditions can be excluded, the suspicions of malignancy become even greater.

Should Allow Surgeon to Explore

At this stage of the growth, means of diagnosis other than surgery are insufficient. The doctor should urge that exploratory incisions be made on all persons over 40 years of age who present gastric symptoms that are not relieved by a few weeks of treatment. Especially is this the case if the person presents a history of rather abrupt onset and some loss of flesh.

Dr. William J. Mayo has demonstrated that many cures may be obtained in gastric cancer when operation is performed early. Of 427 patients operated upon at his clinic from 1905 to 1918, 311 were traced. Of these 120 (about 38.5 per cent.) were alive three years or more after operation.

When gastric cancer is recognized sufficiently early, the person has from a radical operation at least a 90 per cent. chance of recovery, and a 36 per cent. chance for a three year cure and a 25 per cent. chance of a five year cure.

Protecting the Health and Morals of Harvesters

LOUISE F. SHIELDS

FRUIT and hop growers in Oregon have established a new standard in caring for the health and morals of their harvesters, through experiments tried on large hop ranches and in a fruit center of ten leading members of the Hood River Apple Growers' Association.

From one tenth to one half of the harvesters in most of the agricultural sections of Oregon are families which left their homes in the East, South or Middle West with the hope of establishing homes on the Pacific Coast, but without sufficient funds to engage in business and without the assurance of a job.

Only Livelihood Is Following the Crops

They have taken the only apparent means of obtaining food and shelter in following the crops; in California, winter harvest of oranges, nuts and cotton, northward through the asparagus, tomato, cherry and berry region, and into the fall season of the Northwest's hops, prunes, pears and apples.

Many of these persons have held positions of responsibility in their former homes, but have become discouraged and have lowered their standards. Others were ne'er-do-wells before they started west in their cheap cars, or hiking and beating their way on stage and railroad.

One family started from North Dakota three years ago and has not placed the children in school for one day of that period. Another family, which recently applied to the Portland Public Welfare Bureau for relief, had started from Illinois two years before, left one boy in a tuberculosis sanatorium and has several other children in need of medical care. Yet the father boasts that they have been seeing a lot of the country and have not stayed more than three weeks in one place since they started from Illinois.

A family picking apples at Hood River last season had a thirteen year old girl who had stayed in the fourth grade for three years because they moved too often for her to get a promotion; a girl of eleven was still in the first grade. For three years they had lived in a cheap car or a leaky tent, and they had spent one summer in a row boat with only a tarpaulin for roof.

A trail of infectious diseases follows these migrants who work in the harvest fields and

Lois and the twins are day nursery children on an Oregon hop ranch. During the harvesting season, progressive Western ranches are making provision for the care of their workers' children.

canneries, on highways, on jetty and dam construction and in the timber industry. Leading citizens in many communities are demanding a check on the social diseases, which always register a vast increase with the invasion of the migrants.

The Oregon board of health is proposing a state law requiring health inspection of the harvesters admitted from other states. The board has published and mailed to leading agricultural employers a series of three bulletins on "Care for the Human Machine during Harvest"; two are addressed to the employers and concern camp sanitation and provision of facilities for the workers' personal cleanliness; the third is to be posted for the information of the harvesters themselves and has to do with choice of foods and their preparation, with special emphasis on the necessity of washing hands before handling food.

Day Nurseries on Hop Ranches

Owners of six large hop and apple ranches have blazed the trail in caring for their harvesters, making the day nursery the central feature of their activities. By this means they have eliminated one of the chief causes of labor turnover—illness of the children who had been dragged to the orchards or hop yards, into the wet grass of early morning and burning sun at noon—and thus have obtained continuous and efficient service from their workers.

First aid for minor injuries saves loss of time from work. One man whose hand received a deep gash from a hop vine cutter declared that the prompt cleansing and bandaging of his wound had saved him from the weeks of lost time, infection and even the gangrene he had seen in similar cases. Treating poison oak, burns, bruises and prescribing simple remedies for dysentery and other ailments keep the health and recreation staff busy at noon and after working hours. Recreation cars take to town the patients needing professional treatment from doctor or dentist, or a telephone call brings expert service to the camp.

Evening entertainments organized by the recreation staff bring out unsuspected ability among the workers in music, dramatic sketches and stunts, and hold the interest of the young people who in other years have spent many of their nights at public dances which have left a trail of physical and moral disaster. The bonfire closing hour of 9:30 permits the harvesters to have a full night's sleep in preparation for the next day's work.

Two Ranches Conduct Schools

The E. Clemons Horst ranch near Salem, whose manager, H. N. Ord, pioneered in health and recreation service in 1923, has added to the evening entertainments, first aid, and day nursery of the first year, a school under the tuition of a state normal critic teacher.

The Hood River project also includes a school in charge of an expert primary teacher, and cooperates with the county school superintendent in interesting district school boards in bringing the transient children into the local schools, with added teachers for the period of the harvest.

Typical nurseries are those organized by the Council of Women for Home Missions, an interdenominational group with national headquarters in New York. One on the Mitoma hop ranch belonging to Durbin and Conoyer is directed by a primary teacher and her daughter, a playground director and swimming teacher; another on the William Bell hop ranch is under the supervision of a public health nurse; and at Hood River the nursery is in charge of the woman who organized and directed the Portland park bureau recreation system.

Toothbrush drill is a daily ceremony at the Mitoma Kiddie Kamp, at Mitoma ranch, during the hop picking season.

Children come to the Kiddie Kamps between six and seven in the morning when their parents start to work, and stay until five or six in the evening when the day's work is done. In the Hood River demonstration, they are collected by automobiles, since the project serves a group of ranches, each with a unit of forty to seventy workers, in contrast with the hop ranch groups of 400 to 1,500 harvesters.

Health habits receive much attention from the time of the toothbrush drill in the early morning, to the time of fifth or fifteenth washing of face and hands before going home at night. A committee of highly critical judges from the older children determine each day which child's cleanliness had best earned him the right to hold the American flag during the morning salute. The tears from those who had tried and failed to be the cleanest are an incentive to greater effort the next day.

Children Trained in Health Habits

Health education receives an impetus from the use of individual paper drinking cups and paper towels. Even the two year olds learn the proper hooks for their cups in the wall sections reserved for their particular coats and caps, and will stand at their places, cups in hand, while the water is dipped from the passing bucket.

Some who have been thirsty without knowing what makes them peevish now have regular hours for drinking. Others who have been allowed to "piece" whenever fancy suggested hunger now have their mid-morning and mid-afternoon lunches at quite as regular intervals as their three meals a day.

An afternoon nap for all under six years is scheduled as inexorably as the laws of the Medes and Persians. Only one child slept the first day at the Mitoma day nursery, but all had to lie down and close their eyes. On the second day ten dropped off, and after that there were few who did not drift quickly into slumberland under the soothing influence of a song or story. Even the older brothers and sisters who come after school and on Saturday often ask if they may go into the sleeping tent and take a nap on the comfortable straw bed with plenty of covers.

The games taught are planned for correction of faulty posture habits and for coordination of muscles as well as for good times. Health stories hold an important place, along with those from the Bible and from great secular literature.

A definite schedule includes instruction in "the three R's" and handcrafts, with full time teachers on two of the ranches. Ample pro-

vision is made for swings, slides, teeter boards, giant strides, swinging rings and sand boxes under the great trees on the hop ranches in September, and under a huge tent for the colder weather of October in the apple section.

Some very sick children have been found in each project, and these require nursing care and occasional consultations with the county physician. The county public health nurses in Marion and Hood River counties have made frequent visits to the nurseries, have eliminated several cases of infectious skin diseases, and have performed important dressings.

A six months old baby was referred to the county physician upon the first meeting of the recreation supervisors with the mother, and the child improved steadily under special care in the day nursery, with the exception of one day following the mother's taking the baby and her brothers, two and four years old, to a dance which lasted until two a. m. The baby, according to the county nurse, gained three pounds in the three weeks.

Defense day last year was used on several ranches as a time for teaching the patriotic duty of keeping fit physically. Evening bonfire entertainments gave an opportunity for the children to entertain their parents and friends with the drills, stories and dances they had learned in the nursery.

Parents came to the supervisors of the Hood River project and asked that the nursery be continued beyond the period of the apple picking for which it was planned, for the three or four additional weeks of apple packing.

The service, which was purposed for the migratory families, proved of value to residents also, and enabled many women who had become expert sorters and packers to accept the offer of the fruit growers to earn $3 to $4 a day, now that their children might be under proper care.

One of the orchardists, in commenting on the nursery, said: "It has been worth the $10 I contributed toward the nursery to have my workers relieved about the safety of their children. They have been able to do a full day's work without running to the door every few minutes to see whether their babies were in the wet grass, eating dirt, getting fingers caught in machinery or, worst of all, preparing for an all night pain by eating too many apples."

The management of each of the six ranches which tried the demonstration announces that it will continue the health and recreation service this next season. One of the growers says: "It is a good insurance against labor turnover, because it keeps the people well and contented, and stimulates a pride in their work by publication in our recreation bulletins of the day's high records in efficiency."

Bathing and Cleanliness

MOST of us enjoy being clean; bathing is a natural instinct and the use of plenty of soap and water brings its own reward in increased health and vitality.

The Cold Bath

The cold or cool bath or shower taken in a warm room every morning is a worth-while practice. If you are just starting the cold morning bath habit, take a bath towel, wring it out of cold water and rub the body briskly with it. This will pave the way for the shower of cold water. If the body does not react with a warm glow about one or two minutes after the cold sponge and rub down, you are probably not physically suited for a cold shower. You should then take a warm shower for a few moments, and follow this by a short cold shower and vigorous rubbing with a coarse bath towel.

If taken every day, the cold bath or shower will help to make the skin active and healthy. Some physicians recommend it also for keeping the skin toned up and to ward off colds.

The Warm Cleansing Bath

The cold morning shower is healthful but it is not sufficient to keep the body clean. Everyone should take at least three warm baths a week, and fastidious persons will enjoy one each day, especially in hot weather.

The best time to take the warm cleansing bath is just before retiring, as it relaxes the muscles and nerves and induces sleep. Use plenty of warm water and pure soap. The water should be about 95 or 97 degrees F., and after soaking one or two minutes lather the body with soap. Then immerse the body in the warm water and dry thoroughly (pat, do not rub).

Hot and Steam Baths

The very hot bath which induces perspiration is excellent for some persons. This bath, too, should be taken just before retiring. If the very hot bath leaves you so exhausted that you cannot sleep, you should avoid it and take only neutral, warm baths.

Lie in the hot water (as hot as can be borne) for about five minutes, or until you have started to perspire. The body can then be well lathered with soap, rubbed with a coarse wash cloth and again immersed in the hot water for five minutes. The skin can be cooled by a quick cold shower and rubbed vigorously with a bath towel.

For those who react favorably and enjoy the process there are vapor cabinet baths, Turkish baths, and electric cabinet baths. You must be well acquainted with your physical fitness before taking baths that induce a free flow of perspiration. However, the majority of persons will be benefited. Hot or steam baths are especially useful in ridding the body of waste materials and in preventing muscle soreness after extra exertion.

Soap and water will not prevent disease, but will clear away the dirt that harbors disease germs. Bathe often!

Permanent Waving

To the Editor:—My hair has always been a cause of worry to me. I have very fine, soft, silky hair which has always been thin and had a tendency to fall out. Recently I was suffering with seborrhea. I am rid of that now but, as a result, my hair is very thin. Since my hair looks so stringy I am thinking of having a Nestle Lanoil permanent wave put into it. Do you think this will be so harmful that I should not do it? I will be more than thankful if you will advise me about an effective tonic, one that will make my hair grow in. I would also like to have certain definite rules for the care of the hair, such as washing, etc. Also, if you think it is not so harmful to get a permanent wave, will you please advise me as to special care (with a permanent wave) so that my scalp does not become too dry?

M. B., New York.

Answer.—Fine hair does not make as good a showing as coarse hair and therefore your hair appears thinner than it probably actually is.

A permanent wave when carried out properly and carefully by an experienced operator may do little or no harm. The nature of a "tonic" to be applied is determined by the condition of the scalp, and for this a skin specialist should be consulted.

Washing your scalp with good castile soap once every two weeks would not be excessive. If too dry afterward, a small quantity of olive oil might be applied.

Ridding the Household of Insect Pests

LOUIS GERSHENFELD

THE most efficient remedy for the eradication of many household insect pests and their eggs is fumigation of the house or room with hydrocyanic acid gas. This gas has little effect in the destruction of bacteria, but is the best insecticidal fumigant. It is a standard remedy against household insects to be used only when all other measures have failed.

Rats, mice and almost all types of insects and of animal life are killed by its use. It seems to have the peculiar and fortunate property of causing insects and animals to rush forth from their hiding places. On this account there is little annoyance from dead insects or animals putrefying in any part of the home that cannot be reached. If pure materials are employed to generate the vapor (generally a mixture of sodium cyanide and sulphuric acid), the resulting product will not tarnish metal or bleach furnishings.

Hydrocyanic acid gas is extremely poisonous and is fatal to human beings, if inhaled. It is the so-called lethal gas that was employed by the state of Nevada last year to execute a prisoner. Therefore one is cautioned not to undertake this process of fumigation unless it is understood in every particular. Those not skilled in its use should not attempt to fumigate by this process. It is mentioned here merely that readers may know of its action and, if all other methods fail to free an infested home of insect pests, then an experienced worker can be employed to use it. Boards of health, sanitary commissions, or private exterminating concerns can furnish such a person.

Rules for Using Fumigants

When this gas is employed, all humans and pets should leave the home. If the house is attached to other buildings, loosely constructed, it may be best to advise the neighbors to vacate their premises for a few hours or until the process is completed. All fires should be stopped before fumigation is commenced. Liquids, moist foods or anything that may absorb the dry gas should be removed. At least six, but preferably twelve hours, are required for the gas to do its work.

The fumes of burning sulphur act as an efficient and the most practical agent in insect eradication, providing the technic that is employed is thorough and complete.

The following more or less general directions should be observed when using sulphur or any other fumigant:

1. Determine the cubic capacity of the rooms to be treated. This is obtained by multiplying the length, by the width, by the height. Use a proportionate amount of material. In the case of sulphur fumes, 3 lbs. of powdered sulphur are employed for each 1,000 cubic feet of space. A hot coal or a piece of cotton moistened with alcohol or benzine, placed in a depression made in the top of the sulphur, is employed to start the ignition. Sulphur candles, which have wicks, can be used whenever available.

Failures with sulphur candles are often reported, but this is due to the fact that too few candles are used. Remember the amount required for each 1,000 cubic feet of space, as this is usually the minimum quantity necessary to obtain the proper concentration of the gas or vapor.

2. Arrange for the opening of doors and windows from the outside, so as to allow the gas to escape when fumigation is completed.

3. Close all ventilators, registers, fireplaces and other openings, and seal all crevices and openings, either with cotton, waste rags or paper and adhesive tape. The door at the exit is treated from the outside, after the fumigation is started. This is done to prevent the escape of the gas during fumigation. Though the proper concentration of gas may be present, the latter must remain a definite length of time to produce its destructive effects. If the gas should escape, owing to the presence of openings of one kind or another, there is a loss in concentration and the desired effect may not be obtained.

4. Open all cupboards, bookcases and drawers, and throw all articles about loosely so that the gas may reach them.

5. Select the proper vessels in which the gas is to be generated. Shallow iron pots, three to six inches high and one to two feet in diameter, are preferably used to hold powdered or coarsely broken stick or lump sulphur. It is advisable that these vessels should be placed on bricks, the latter in turn extending out of water placed in a wide shallow basin or tub.

6. Allow a clear passageway to the door so that the workers will be able to leave quickly.

7. Permit the fumigant to act for at least twelve and preferably twenty-four hours. The

length of time depends upon the gas which is being generated and upon the contents in the environment being treated. Sulphur fumes require at least twelve hours and preferably twenty-four hours. The longer time is necessary if the room is laden with many materials.

8. If a room or compartment is to be treated on more than one floor in a dwelling or building, start the treatment on the uppermost floor and continue to the lower floors.

Fumigants are only effective if all the above directions are carefully observed and executed. It is my personal opinion that the average householder rarely employs this technic with the required degree of care. On this account, fumigation in his hands is in many cases of little value as an effective measure for the eradication of household pests.

Sulphur May Bleach Furnishings

The fumes of burning sulphur will tarnish metal and, if moisture is present, as it may be if the humidity is high, furnishings and other equipment will be bleached. When the atmosphere is dry, there is very little, if any, bleaching produced although the gas is capable of destroying the insect pests.

In the absence of moisture, the fumes of sulphur destroy insects only. In the presence of moisture, the fumes will not only destroy insect pests but bacteria as well, if a minimum of 5 lbs. of sulphur is used for each 1,000 cubic feet of space. Owing to the bleaching effect produced under such conditions, sulphur fumes can be employed for bactericidal as well as insecticidal effects only in empty buildings, cellars or garages in which there is no paper and other equipment to be affected.

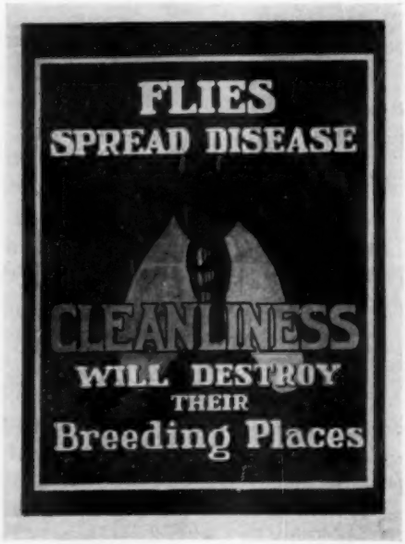
Roaches and bedbugs, the most annoying and most disagreeable of the various pests found in the home, have thin flat bodies, and are capable of finding their way into crevices that may not be reached quickly by a fumigant. This is especially true of sulphur fumes. It may, therefore, be necessary to prolong or repeat the fumigation when employing sulphur fumes in the eradication of roaches and bedbugs.

Formaldehyde Gas Won't Kill Insects

Many seem to be impressed with the fact that formaldehyde gas, being the most efficient, practical fumigant employed to destroy bacteria, also will be effective against insects. This is an erroneous view, as formaldehyde gas will not kill the commonly observed household insect pests. If in inhabited dwellings, formaldehyde gas is to be employed to kill bacteria, and sulphur or hydrocyanic acid gas is to be used to destroy insects, both gases should not be generated at the same time. One gas should be allowed to act, and then after a lapse of twenty-four hours, the other gas should be generated.

Other gases or vapors have been experimented with. They have not been found to be destructive to all of the commonly found insect pests. They are being employed by some to assist in the eradication of one or a few of the household pests. They possess specific destructive or repellant properties only against these few and not as general insecticides, such as hydrocyanic acid gas and sulphur fumes. Mention will be made later of the specific properties of these other gases.

[*To be continued in September issue.*]



Marjorie G. Berry

Freaks of Nature

RICHARD E. STIFEL

CONGENITAL deformities are abnormal conditions in the bones and joints present at birth. When the abnormality is extreme and unusual it is called a monstrosity. Most monsters are born dead, but a few, such as the Siamese twins, the three legged man and other circus freaks, live to adult life.

Interest in freaks of nature is universal. Who has not been thrilled by the side-show, or by the description of the monsters of Greek mythology? The one eyed Cyclops and the double headed creatures of story are monsters such as occasionally appear in real life and are illustrated in books on pathology. The imaginative ancients, however, were not content with these horrible creatures but went one step ahead of nature and described beings part human and part animal or fish. Such combinations are obviously impossible.

Congenital deformities have always caused much speculation. Hippocrates and Galen believed they were due to impressions made on the pregnant mother. Aristotle, perhaps the greatest of the ancient scientists, ascribed them to "errors in creation." The question is still mystifying. But the theory of maternal impressions is obsolete. No scientist or intelligent person today believes that red birthmarks are due to the mother having seen blood, or hairy moles to her having seen a mouse.

Child Not Marked by Mother's Fright

Indeed, it is known that no nervous experience of the mother, either pleasant or unpleasant, short of actual physical violence or poisoning as from lead or syphilis, can have any effect on the unborn child. The great laws of heredity govern the succeeding generations of mankind as of other living creatures. The germ plasm, the tissue from which all germinal cells both male and female spring, is unalterable. It goes serenely on in spite of education or ignorance. Environment, so effective in changing and directing the individual's life, changes the germ plasm not at all.

Even the transfer of the germinal tissue from one animal to another is futile. Prof. Ernest Castle transplanted the ovaries of white guinea pigs that were true albinos to black guinea pigs; the germ plasm was unaffected and the offspring were white when mated with white.

Some congenital deformities are what the animal breeder would call "sports"; that is, new forms produced by nature in blind experiment for something better. They also are called mutations. Others are examples of reversion or a return to primitive conditions, such are the instances of rudimentary tails and of vestiges of gill slits. Still others are developmental defects; such as cleft palate and spina bifida or incomplete closure of the spinal canal.

Certain congenital deformities are possibly due to unnatural positions of the child in the uterus. Club foot and congenital wry-neck, a peculiar deviation of the head to one side, comes in this classification. Yet other deformities are the result of accidents before birth; such are the cases of arms and legs amputated by constricting bands of the membranes that cover the developing child. Why these membranous folds sometimes become twisted and do damage is not clear.

Cure of Deformities Must Start Early

Our interest in congenital deformities lies, however, not in the causes of the condition—most of which are entirely beyond our control—but in the correction and cure of such troubles when they happen to be present. One important point that deserves great emphasis is the urgent need of early treatment. As soon as a child's deformed foot is detected, as soon as the peculiar gait is recognized, the parents should consult a physician. Through ignorance too often the thing is neglected until the most favorable correction is impossible. The crippled child, too, is generally spoiled and pampered because every one feels sorry for him and tries to humor him. He thus tends to become a pathetic little autocrat in the home circle. His objection to being taken to a doctor or hospital is apt to be heeded until it is too late.

The most common congenital deformity is clubfoot, of which there are several varieties. In the commonest form the foot is twisted sharply down and inward so that when an attempt is made to stand, the weight of the body is thrown not on the sole but on the toes and outer side of the foot.

These cases are usually treated during the first weeks of life by gentle daily manipulations performed by the mother. Following this, plaster casts are applied while the feet are held in the corrected position. Occasionally the feet are wrenched forcibly under anesthesia. Cutting operations are rarely necessary, if treatment is

begun early. Under these conditions the results are generally excellent; the club feet are restored to normal.

The poet Byron had a clubfoot which caused him a life time of embarrassment. Talleyrand had a clubfoot, which may have been partly responsible for the distorted outlook he had on life. Such misfortunes can be avoided today.

Quite as important, though less well known than clubfeet are the cases of congenital dislocation of the hips. This condition usually occurs in girls, one or both hips being out of joint. The condition is first noted when the child begins walking. The gait is peculiar, unsteady, wabbling. If such cases come under treatment as soon as the trouble is noted the displaced hips can generally be forced back into the hip sockets. They are then held there for a time in plaster casts. No cutting operation is usually required.

But if these children are neglected until they are 8 or 10 years old correction of the deformity is difficult and sometimes impossible even with open or cutting operations. The gait is then permanently crippled and walking is sometimes painful. No cases are more urgently in need of early treatment than children with congenital dislocation of the hips. Their chance of cure under favorable conditions is present only for a few short years in childhood. When it is passed, it is passed forever.

The treatment of most congenital deformities comes under the scope of orthopedic surgery. The word "orthopedic" was originated by a French surgeon, Andry. It comes from two Greek words, the first meaning straight and the second child.

Orthopedic surgery has outgrown its primary significance and is not confined to straightening the deformities of children. It is a branch of the regular and legitimate science of medicine. It has no association with any of the medical cults that seek magically to arrange everything under one trick formula. In other words it has no connection with osteopathy or chiropractic.

Exercise Your Lungs

LEVIS PRIZER

BREATHING exercises are like cod liver oil; you get a great deal for your money. Considering the time and energy put into them they yield a maximum return. Of course no one can claim that they take the place of such sports as tennis, golf or hiking, any more that cod liver oil can take the place of good nourishing food, but when for any reason other forms of exercise are impossible, they are beyond compare.

The object of deep breathing is to stimulate the circulation and to provide the body with oxygen. Consequently breathing exercises are best performed out of doors. If this is impossible a well-ventilated room will serve the purpose—a room in which the windows are open as far as they will go.

Are Best Done to Music

A standard form of breathing exercise, and one which is excellent, consists in slowly drawing a deep breath, at the same time raising the arms from beside the body to a position directly over the head, and then letting out the breath while the arms are slowly returned to their original position. Care should be taken that expiration is as complete as inspiration, since insufficient deflation of the lungs is a mistake often made.

These maneuvers are best performed by count or to the accompaniment of music, and pauses should be allowed at frequent intervals for rest. Five minutes spent in this way every morning and evening will result in a marked improvement in health and a general sense of well-being.

One great advantage of breathing exercises is that they are suited to invalids and may even be taken by patients in bed.

Not Safe for Every One

It is to be understood that there are conditions in which not even breathing exercises are safe. This is particularly true of diseases of the heart and the lungs. Whenever reason exists to suspect trouble of this character it is wise to consult a physician before attempting any exercise whatsoever. Serious accidents will occasionally occur if this rule is disregarded.

Generally speaking, however, deep breathing, regularly practiced, will prove an inestimable boon to all those unable to indulge in more vigorous forms of exercise. The benefit to be derived in this way can be fully appreciated only by those who have actually experienced it. Of all the organs of the body the heart and lungs are in a sense the most vital and if they are kept vigorous, good health is more easily maintained. Hence ten or fifteen minutes a day devoted to this purpose is time well spent.

Are Your Nerves in Tune?

MANTON M. CARRICK

IN OUR grandmother's day it was not considered good form to mention nerves any more than bowels or some other vulgar portion of the human anatomy. When necessary to refer to a nervous individual it was done in terms of contempt or reproach. "There's nothing wrong with her but nerves; she simply lacks control," they would say; or "she's a bundle of nerves." If a man admitted that he had nerves he was labeled as a fit subject for an asylum.

Nowadays we lay everything on our nerves, nor do we seem especially ashamed of the malady. Even the most Herculean specimen of manhood is not exempt. In fact, our sanitariums throughout the country are filled with men and women sojourning there for their nerves, all of which is proof of the alarming increase of this national menace. Nevertheless, the way of the neurasthenic like that of the transgressor is as hard as ever, for he receives little if any sympathy.

One of the many underlying causes for this appalling state of affairs is our profligacy of nervous energy. It is the tendency of the age to expend more brain than brawn in the performance of our daily tasks. Even the farmer exemplifies this fact in his agricultural pursuits. This prevalence of nerve strain in all walks of life, the increasing strenuousness of modern existence, is certainly making us a nation of neurasthenics. Those less kind label us "grouches." On all sides, however, are danger signals warning us to avoid the road of irritability, worry, jealousy, temper, insomnia, and all the other highways that twist and wind their tortuous way up the mountain slopes to the land of grouchdom. Then why not call a halt on our journey before it is too late?

What is a grouch? He is a man who goes about with a chip on his shoulder. He is an embryo neurotic, an individual who is off the track. He has lost his way in the fog. Of course, he believes himself to be ill used by his family and the world at large. Having an ingrowing disposition, he prefers gloom to joy, perpetual fog to radiant sunshine. He is always crossing bridges that span imaginary rivers. He is a victim of blue Mondays and sees the cloud rather than the silver lining. He takes his worries to bed with him and never woos refreshing slumber, with the result that he is a worse grouch than ever the following morning. If he steps on a tack or if his toast and coffee happen to be cold, woe be to any one who crosses his path that day.

If You Are a Grouch

If you are a grouch, enter your chamber, close the door softly and pray in secret to be delivered from this state of mind. Turn yourself inside out and take account of stock. If unable to get down to the root of the trouble, cease to waste money on alleged nerve tonics and Blue Pills for Blue People, and treat yourself exactly as you would your automobile. Take yourself to an expert for a thorough overhauling of your body, without further delay. Do not loiter along the byways of neurasthenia, melancholia or hysteria, visiting this rest cure and that psychic sanitarium in a vain endeavor to swap old nerves for new ones. Get right down to business and consult a nerve specialist.

Of course you will have an impressive little speech all ready for him.

"My nerves are all on edge, Doc. I've come to see if you can't fix them up. And my heart is bad," you add gloomily.

"That's it, lay everything on your nerves and heart," he is liable to flash back. "Come now, let's see. How about that terrapin or lobster you ate at the midnight banquet? And how many soft-shelled crabs did you consume?"

"But it isn't my stomach, it's my nerves—and heart."

"Oh, yes, I know that your nerves are out of tune. How can they help but be? You've been treating your long-suffering nervous system so shabbily that its ganglia are in a state of rebellion. They're just retaliating with headaches, sleeplessness, loss of appetite and a few other queer symptoms like the pain round your heart.

"How many cigarets are you smoking daily? Are you addicted to the tea and coffee habit? Do you take a wee nippie on the side? Are you sure that every tooth in your mouth is sound as a dollar and that there's no infection? And how about your bowels? And your vision? . . ."

By the time you have answered this questionnaire and have been examined from the crown of your head to the soles of your feet, you have unconsciously revealed the cause or variety of causes, physical and mental, as well as those rising out of your environment, which are responsible for your present plight of irritability, depression, fear, discouragement, insomnia and, above all, grouchiness.

Meantime, you have learned a thing or two about yourself. Your heart, which you believed to have a lesion because your father's had, and it "runs in the family," is as sound as Firpo's. Moreover, there is not a defect in your entire anatomy. You are chagrined rather than relieved; even more so when the specialist tells you that nervousness is not a disease of nerves or brain, or any other portion of the human anatomy, but a disorder resulting from maladjustment to life. In other words your brain cells are upset in their natural processes by certain physical or mental influences, the latter including environment.

Instead of inquiring into the details as to how your nerves feel, the specialist never mentions them. He asks you very minutely about your daily habits of life—whether you partake of well-balanced, nourishing meals regularly, whether you are a coffee or tea bibber, and a pastry and bonbon addict. He also inquires casually as to the supply of oxygen you provide your tissues day and night, the amount and kind of exercise you take, how many hours you give to sleep. In short, you are interrogated regarding a hundred and one personal matters that you consider none of his business and you feel like telling him so.

Seeing no other way, however, but to entrust yourself to his care or let your world go smash, you pin your faith to his guidance. When you emerge from chaos weeks or months later with new nerves for old, and all of them in tune, you are more than satisfied with the experiment.

Overhauling the Mind

Physicians once treated solely the physical being and little or no attention was paid to mental habits. Now both body and mind are given a thorough overhauling, and each weighed in the balance. While the body is carefully inspected for abnormalities or possible infections the mind in which you dwell quite as much as in the body is subjected to rigid examination for bad mental habits, obsessions, aberrations and foibles with a view to uncovering possible reflexes upon the body.

Most persons under such an examination reveal more of their emotional life than they mean to, if not on the first visit on subsequent ones. Sometimes even the keenest specialist is sorely puzzled at his inability to uncover the cause of his patient's nervousness; then in an unwary moment there is a revelation of some great emotional experience—a love affair, illicit or suppressed, self-pity, fear of some one or some thing, or possibly a loathing for a mate to whom the patient is bound like Prometheus to the rocks, a vulture ever tearing his flesh. Presto, the cause is uncovered!

After the reason for your trouble is accounted for, the wise mental hygienist gets in his fine work. Quietly but firmly he begins the reeducating process, pointing out the disastrous effects of all uncurbed emotions like anger, jealousy, worry and fear upon the nervous system. He inspires hope by assuring you that you may be master of the situation, rather than mastered, that you may dwell in serenity and peace rather than in eternal grouchdom. Moreover, you are made to understand that medicine cannot benefit your digestive organs if you indulge in fits of temper which check the flow of the gastric juice and paralyze muscular action.

You are, furthermore, urged to rid your mind of all rubbish—the griefs that cannot be helped by dwelling upon them, the fears that obsess you. All these things, you are told, are a part of each human experience. No one is exempt. Less self-pity and more sympathy and understanding for your fellow-men will help to give you a truer perspective of life.

Suppression of these states of mind, you are told, will not bring about relief, for you will still carry a subconscious load of suffering and misery. The only logical course is to remove entirely the mental cause, whatever it may be—grief, self-pity, worry or jealousy. After this, nature's healing will begin. Then you must get busy and do something for some one else and you will find that you are not the center of the universe.

Reorganizing Your Habits

If you have not already established certain habits of life—a time to eat, exercise, work and play—it is time that you reorganized your routine. When you eat, you must do nothing but enjoy your food in pleasing, appetizing surroundings, worry and all other disconcerting states of mind banished for the time being; when you sleep, cast care to the wind, or better still, entrust it to Divine Providence, and make it your business to sleep, sound, unbroken, refreshing slumber that nature generously provides for the rest of weary bodies and the rebuilding of exhausted nerve cells. Whatever you do, whether it be eating, sleeping or exercising, keep each thing in proper, relative proportion concentrating upon the thing in hand.

Above all, avoid haste and worry, and make clean-cut, practical decisions, holding your emotions in leash. When you meet life absolutely unmoved on the inside, you are master, and your emotions will automatically mobilize themselves into energies to do your bidding.

You will now find yourself falling in line by awakening on time in the morning. Instead of starting the day with the old-time feeling of depression, and groaning with dread over the tasks that lie ahead, set another brain cell to working by taking a dose of the tonic of cheerfulness. Try to be glad that you are alive and by and by you really will be.

Before you rise, yawn and stretch, cat-wise, bringing every muscle into play. Rise and drink at least one glass of cold water, sipping instead of gulping it down. Before the open window, take a lung bath in the pure, fresh morning air.

By this time every nerve and muscle is a-tingle, and you are ready for a brisk bath and rub-down. Somehow you actually feel halfway cheerful instead of simulating it. You still have time to partake of a wholesome, nourishing breakfast, instead of snatching at your customary cup of coffee. Meantime, the entire mental atmosphere of the household seems quite different. Of course, it cannot be otherwise, for cheerfulness is an antidote to the grouches, and it is a physiological fact that an absolutely cheerful man or woman is free from nerves and grouches.

Having started the day right, you are in condition physically and mentally to meet the world with a smile instead of a frown. Somehow all through the day the wheels of your business machinery run more smoothly than they have done before in months.

You pause to ponder how absurd you have been to fly into a rage over trifles, and you determine that the next time any one says anything to you that you do not like, instead of having a brain storm, you will corner this particular brain cell and have it out. Possibly the test will come sooner than you anticipate. It is generally so. You refuse to tear yourself to pieces over such a trifle. It is not true, so why should you worry? And if it were true, you should be thankful to have the matter brought to your attention. The law of non-resistance is a splendid one to observe in a case of nerves. It helps to restore poise more than all else.

Do you realize the time that it takes to rebuild a nerve cell that you tear down when you indulge in a temper? Of course, you must realize that every time you overwork your brain cells there is an actual breakdown of their active substance and they can no longer function properly. Instead, they begin to go round and round in a vicious circle, taking their toll as the price of lack of control.

Nerves Out of Tune

It is all very simple to the nerve specialist. He observes a brain abnormally harassed and susceptible to all sorts of impulses. He knows that the nervous system is much like a musical instrument that is out of tune. Strike a chord on a pipe organ and observe how you recoil under the infliction if it is out of tune. That is the way it is with you when your nerves are out of tune.

There is no instrument so wonderful as the complexity of the nervous system with its double keyboard, primary and secondary. While the secondary nervous system is left quite out of the reckoning by most persons, it nevertheless performs miracles that no scientist can duplicate in a perfectly equipped laboratory. This secondary nervous system looks after all the repairs in the myriad cells that go to make up the body. When you pause to think that each cell is an individual organism, an entity, that must be catered to, fed, exercised and renovated by the removal of all waste, some idea may be gleaned of the really wonderful complexity of this marvelous controlling power. Yet the reward most of you give to this efficient aide de camp is not calculated to keep your nerves in tune, or to insure you against being grouches.

Closely linked as are the two nervous systems, like the two keyboards of the organ, their *modus operandi* is quite different. The sensory motor system, which has for its centers the spinal cord and brain, has to do with the whole realm of the conscious mind, controlling the voluntary muscles and, therefore, your seeing, feeling, willing, and thinking ability. To keep these nerves in order is a big job in itself, but it is one that is necessary to efficiency in the performance of every task.

Women More Susceptible to "Nerves"

The other great keyboard, the sympathetic nervous system, the presence of which you never realize until it is out of order, controls the functions of the body that are beyond conscious direction, thus permitting you to go about your business. Meantime, digestion, assimilation of food, nourishment of the myriad of cells in the sensory nervous system, action of all the glands, secretory and excretory, the heart and the blood vessels, and breathing apparatus go on like clockwork. But, upset the brain cells in their natural processes by certain physical and mental influences, and the victim develops a case of nerves.

While men and women react differently to the realities of life, and while both are afflicted with nerves, there is no doubt that women are more profoundly affected in the long run. Their nerves get out of tune more readily. Countless reasons exist for this physiological fact. Woman's organism is such that she gives way more quickly to tension, in the strain and stress of existence. While she can endure physical and mental pain more stoically and rise heroically to great calamities, she permits the little pin-pricks of daily life to upset her equilibrium and poise more than does man.

Viewing her erratic behavior, the bachelor says:

"I cannot think of any worse punishment than being tied to a nervous woman for life. A life sentence in prison, but no Xantippe for me!"

"I would rather be an old maid all my days than to be bound to a nervous, grouchy husband," retorts the spinster.

So there you are, tit for tat.

Measles

ABRAHAM ZINGHER

AMONG the contagious diseases of childhood measles is one of the most widespread, affecting nearly all races of mankind. Every child is susceptible to it and even adults who have not had measles in childhood are prone to get the disease if they are exposed. When measles is introduced into a new community, it is liable to attack individuals of all ages in an extensive epidemic.

In 1875 measles was imported for the first time to the Fiji Islands and as a result of the epidemic that followed 40,000 out of 150,000 of the inhabitants died in four months. A similar severe epidemic occurred in 1846 in the Faroe Islands. Therefore measles, usually considered a mild disease in localities in which it is constantly prevalent, may become a malignant plague when it breaks out in places in which the population has never had it before.

The human race is especially susceptible to infection with the measles virus. The great tendency to acquire the infection can be seen from the fact that ninety-eight out of every 100 children who have not had measles before will come down with it after exposure. Experimental work with measles is difficult on account of the immunity of animals to infection. It is claimed, however, that the monkey and the rabbit can be infected experimentally with measles and will show a slight rash resembling somewhat the one in human beings.

The germ that causes measles has not yet been discovered. The infectious agent is present in the discharges from the nose and mouth, as well as in the blood, during the early stages of measles, even before the rash has appeared. Measles is most contagious, in fact, during the three or four days preceding the appearance of the rash.

Symptoms of Measles

The symptoms appear about ten or twelve days after exposure to the infection. This interval is called the period of incubation. At the end of this time the symptoms begin to manifest themselves. The clinical course of a case of measles divides itself into two stages, the stage of invasion and the stage of eruption.

The disease begins with catarrhal symptoms resembling an ordinary cold. The child sneezes and coughs, has a running nose, reddened eyes and fever. After three or four days the rash appears. Even before the rash comes out, the diagnosis of measles can sometimes be made by finding on the inside of the cheeks little bluish white specks, surrounded by a red ring; these are known as Koplik's spots.

The second or eruptive stage has been well described by Sydenham, one of the foremost clinicians of his time: "The catarrhal symptoms increase until the fourth day. At that period little red spots, just like flea bites, begin to come out on the forehead and the rest of the face. These increase both in size and number, group themselves in clusters, and mark the face with large red spots of different figures. From the face, where they first appear, these spots spread downward to the breast and belly; afterward to the thighs and legs." After two or three days the rash fades and leaves behind a fine superficial scaling of the skin.

Measles itself is usually a mild disease yet it may become dangerous on account of its complications. Croup, bronchopneumonia, ear infections and mastoid disease are among the more frequent and serious ones. In institutions and hospitals that take care of small children, measles is justly dreaded. Among the sequels of measles may be a tuberculous infection of the lungs, leading sometimes to a fatal termination.

Measles may be mistaken for other diseases, such as scarlet fever, German measles, smallpox and even drug eruptions. The characteristic measly rash, preceded by catarrhal symptoms such as running at the nose, sneezing and coughing, bleary reddened eyes and the characteristic Koplik's spots in the mouth, should help in making a definite diagnosis of measles. Measles may be very mild and show little or no rash. On the other hand, it may become extremely malignant, the so-called black measles, in which the patient has profuse hemorrhages into the skin and from the mucous membranes lining the nose and mouth.

Prevention of Measles

Prevention of measles by isolation of exposed children after a case has developed in a family or an institution is difficult and frequently impossible. The usual course followed is to quarantine the patient and not to allow the other children to attend school for a period of two or three weeks. During this time the exposed children will generally develop measles if they have not had it before.

An efficient method of protection against measles has been developed recently. This consists of injecting into the child exposed a small amount of blood serum obtained from convalescent measles patients, one to two weeks after the temperature has returned to normal. The serum contains protective substances or antibodies and is injected in a dose of 5 to 10 c.c. as soon after exposure as possible. By this method about 80 per cent. of children can be completely protected for a period of four or five weeks. In the remaining 20 per cent. the disease will not be prevented but will be considerably modified, a very mild form of measles developing. By injecting a small dose of serum into children who have been exposed for five days or more, the doctor can often cause to develop this mild form of measles. Under certain conditions it is preferable thus to make certain that the children are completely protected. This treatment is indicated, for instance, in young and feeble children and in those suffering from rickets, tuberculosis, diphtheria or whooping cough.

In institutions and in hospitals it is generally very important to stamp out an outbreak of measles by the early and prompt administration of convalescent serum in sufficient doses. The protection thus obtained is temporary, however. In normal healthy children it is preferable to modify the course of the disease rather than to prevent its development completely, for the mild form of measles will lead to more or less permanent immunity from subsequent attacks. This frequently can be accomplished by injecting smaller doses of convalescent serum or by waiting until the children have been exposed for six days before injecting the serum.

Convalescent serum is not always available. It is, therefore, fortunate that the blood serum can be used from other members of the family who have had measles several years previously or in childhood. The dose, however, should be larger, preferably three times the amount of convalescent serum recommended.

The treatment of measles in an uncomplicated case is very simple. The patient should be in bed in a darkened room, so as to protect the eyes, which at this time are sensitive to light. The room should be well ventilated. This is especially important in hospitals and institutions where the patients should not be crowded into small wards, but be allowed plenty of air space. The diet should be light, preferably fluid. The bowels should be regulated with a suitable cathartic.

A warm bath will often hasten the appearance of the rash. If the fever is high and the child is nervous and irritable, he should be sponged or have a tepid bath, which is gradually reduced in temperature.

Treatment of Measles

Complications are treated as they develop. The ears should be carefully examined from time to time, especially when there is any sudden rise in temperature. In the more severe cases with depression of the heart and involvement of the lungs, stimulants are indicated. A hot mustard bath may also be of great value.

Measles in the home is a mild disease as a rule; in institutions and hospitals it is apt to become a dangerous and frequently a fatal ailment.

HYGEIA

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Plain Facts about Health and Disease

TEACHER TRAINING FOR CHILD HEALTH

HEALTH education has assumed such importance in connection with school teaching that over 100 authorities on child health were drawn to the sessions of the fourth annual health education conference at the University of Chicago last month. Those attending did not discuss child health, however, but rather how the teacher can best present health to children, in order to bring the most good in a specific amount of time.

Dr. Thomas D. Wood, professor of physical education and adviser in health education at Teachers College, Columbia University, acted as chairman of the sessions. He emphasized the point that the teacher is the logical person to train in child health, since she is the one who is with the child all day, and has the opportunity to discover physical defects that even the mother would overlook.

What materials, then, has the teacher to aid her in developing habits, establishing attitudes and acquiring knowledge in relation to health?

Several different lines of endeavor were discussed with the suggestion that the teacher should investigate the peculiarities of her particular field, for the purpose of determining what health knowledge her children need.

Some materials for constructive work were mentioned:

1. Pictures and other graphic materials which further the aims of health education should be collected and collections made available for circulation and for classroom use.

2. True stories from the fields of history, biography, science and literature should be selected or written for use in health education.

3. Individual classrooms should be used as sources of vivid, fresh materials which are the direct outgrowth of pupil experiences and classroom activities.

4. Materials valid from the standpoint of content should be adapted not only to the level of the student group but also to the particular needs and resources of the community. J. P.

ICE

A SMALL party of American tourists arrived in Holland in the midforenoon after a sultry railway journey from Amsterdam. A thirsty boy of five urgently demanded ice water, but the waiter at the station restaurant could not seem to understand that *ice* was really wanted. Finally a small portion of ice, handled like a rare and precious gem, was brought forth and the waiter gazed in awe and apparent alarm as the ice water was drunk. Apparently he expected sudden death or at least serious illness to follow drinking the ice water.

Later in the quaint and delightful inn at Haarlem, overlooking the deer park, the party debated the kind of refreshment which would be most satisfying before retiring. Lemonade, ice cream, ginger ale, beer, wine and other drinks, hard and soft, yielded to ice water. Presently the waiter appeared with a carafe of water and a chunk of ice about the size of two fists. In the bill 1½ guldens, or about 60c in U. S. money, represented the price of the ice debauch. Sixty cents at that time was the equivalent of $1.50 at the present and would have purchased a quart or more of good wine or eight or ten steins of beer.

It is not many years since ice water was regarded by Europeans as a luxury. The drinking of ice cold water is still thought by many to be a menace to health. The gulping of large quantities at meal time or when one is exceedingly hot may be followed by bad effects, but iced drinks of any sort sipped slowly are grateful and healthful. The drinking of iced water even with the meals, when taken in small sips, rarely interferes with digestion or produces unpleasant symptoms.

The use of ice for refrigeration to preserve food is a necessity and an economy under modern conditions. The dietary is no longer limited to foods in season, but may include a variety of foods at all seasons of the year. The cold storage warehouse and the domestic refrigerator are comparatively recent additions to our resources, but they are important contributions to human happiness and health.

The efficiency of the household ice box can be much enhanced and the cost of maintenance lessened by intelligent, watchful attention. The ice chamber should be kept full at all times with as large blocks of ice as it will hold. The rapidity with which ice melts is proportionate to the amount of surface exposed.

In securing portions of ice for use outside the ice box, care should be taken not to chip off a lot of small pieces to be put back into the refrigerator. They melt rapidly. When articles are removed far from the ice box for use, the door should be kept open as short a time as possible. If one is to use only part of the contents of a container in the ice box, say a cup of milk from a quart, a small portion of butter, two or three eggs from a dozen, these should be removed promptly and the remainder at once put back in the refrigerator. Free circulation of air over the ice and through the food compartments of the refrigerator is necessary. Covering the ice in the refrigerator with paper or any material to prevent its melting defeats the purpose for which ice is used.

The interior of the ice box should be kept clean by not allowing anything to spill over and soil the shelves or walls. If this is done, frequent airing of the interior or washing with hot water are unnecessary. The drain pipe should be kept clean and open at all times. If the interior acquires a foul odor at any time, occasionally washing with a one per cent. solution of formaldehyde will disinfect it thoroughly. J. M. D.

THE SOURCES OF INTELLIGENCE

FEW of us appreciate the details of modern experimental psychology and the intricate phases of investigations now being conducted in the psychological laboratories of many leading universities. In the *Journal of Comparative Psychology*, appear papers from various institutions describing attempts to get at the fundamental stimuli that govern animal and human conduct.

For instance, J. F. Dashiell of the University of North Carolina has devised a plan of measuring the urge of hunger as contrasted with curiosity in governing the action of rats. The manner in which the rats investigate their surroundings causes him to believe that curiosity as to environment is almost as important as hunger in the reactions of this species.

Dagny Sunne, working at Newcomb College in New Orleans, found that there are variations in the intelligence of white and negro children. In the elementary grades there were twice as many negro children of very low intelligence rating as white. On the other hand, once started, the general trend of development year by year is much alike for the two racial groups. Finally, the use of various tests causes the author to believe that the complexity of mental measurements is such that generalizations based solely on intelligence ratings should be avoided.

Working in the laboratory of the University of Minnesota, C. Landis and Ruth Gullette studied the effects of emotional reactions on the blood pressure and the rate of breathing. They find that changes of 8 to 12 mm. of blood pressure within a minute are common, while changes as high as 18 to 20 mm. may occur. Surprise causes a sharp rise followed by an immediate fall. The blood pressure changes little in relationship to the speaking of truth or falsehood, so that it can hardly be used to any purpose in criminal procedure. Sex excitement, surprise and fear were usually accompanied by a rise in pressure, whereas anger and disgust showed no change, but these observations, the authors believe, were chance findings.

C. F. Sams and E. C. Tolman, working in the University of California, found that white rats can discriminate and select the shorter of two routes to food.

K. C. Pratt of the Ohio State University found that ants leaving their nests travel at a higher rate of speed than those returning. Humidity has little effect on the rate of locomotion. "It seems probable," says the author, "that the ants are just as, if not more, sensitive to quick changes in temperature than the mercury in the thermometer." He gives many details of his study of ants' locomotion, which are fascinating as well as amusing.

J. Peterson, L. H. Lanier and H. M. Walker, working in the George Peabody College for Teachers, compare the white with negro children in certain ingenuity and speed tests and find that the differences in speed all favor the white children. They also find that the ingenuity tests indicate mental differences, which are not merely due to speed.

Only recently the question was raised as to whether or not the turtle has any intelligence

whatever, and as to whether or not it can distinguish between various stimuli related to hearing. Ryo Kuroda of the College of Niigata, Japan, tested six tortoises as to their ability to distinguish between a bell sound and silence. Previously, O. Andrews found that tortoises may discriminate between sounds, one animal in his series showing signs of learning by the third day and even the slowest learner developing knowledge by the nineteenth day. Kuroda was unable to find such ability in the type of tortoises which he studied, and can only suggest that possibly different species of tortoises vary in their ability.

Here are investigations which are of great practical importance when applied to everyday life, and especially when considered in their relationship to the development of mankind. Perhaps no field of research today offers any greater possibility than this exceedingly interesting search for the well-springs of human intelligence. M. F.

SAFE WATER FOR TOURISTS

WITH the constantly increasing use of the automobile for pleasure, travel and vacationing, and the rapid expansion of the state hard road system opening up new areas for the traveler, the sanitary quality of private and semipublic wells and other sources of water supply located along the hard roads and at tourists camps, or accessible to the automobile traveler, has become quite important.

Formerly each source of such water supply was used by relatively few people and in case of contamination the water-borne illness resulting would not be widespread or far-reaching.

Water from roadside sources is now used, especially during certain seasons of the year, by hundreds of people in a day. If contaminated, widespread water-borne epidemics may result, as the traveler thus infected may in turn carry disease to other persons in other states.

The state department of public health of Illinois, as well as the departments of health in many other states, are making surveys of roadside water supplies for the purpose of informing the public where safe drinking water might be found. Many thousands of such water supplies taken from dug, driven and drilled wells, springs, streams and cisterns are inspected.

The water is tested by a bacteriologist and, if the results of the test are satisfactory and the findings approved at the main health office, a sign is posted near the supply signifying that the water was approved by the state department of health. When traveling through the state of Illinois, the tourist will see a seal made of lead and enameled in yellow, shaped like the state of Illinois which reads: "State of Illinois Department of Public Health—Safe Water."

Watch for this seal when looking for water along the Illinois highways; it means sanitary, wholesome water that is fit to drink. J. P.

ATHLETICS AND HEART DISEASE

MAY the strain of the prolonged physical effort in some of the competitive athletic sports practiced by growing boys and girls result in damage to the heart?

This question was asked of HYGEIA by the director of hygiene in the schools of a large midwestern city. He had recommended the elimination of the 440 yard dash from high school contests because of its telling effect on the heart of the growing child.

This question was submitted to five physicians of large experience and special knowledge of heart conditions and to four directors of physical education, likewise physicians, who have charge of the directing of athletic sports in high schools and colleges.

The replies from the heart specialists are in substantial agreement that, as expressed by one, "in a child whose heart is normal to begin with, as determined by previous careful physical examination, due attention being given to the history as regards rheumatism, etc., no harm would result. A heart weakened by local disease or by general faulty conditions, as anemia or malnutrition, might be seriously damaged."

One physician says, "I have an impression that a normal heart will not dilate, but that the somatic muscles (muscles of limbs and body) will become tired first and thus prevent damage."

Another states that while no special instances of harm from competitive contests to the heart in boys and girls have come to his attention, he has always felt "that prolonged tests of endurance were not the best thing for the heart—tests that tax the heart to its very utmost capacity."

The replies from the physical directors report no specific instances of damage to the normal heart from overstrain, but they are in accord that the more prolonged contests should be prohibited, or permitted only in special cases and that great care should be exercised as to the conditions under which such events are held. One director is of opinion that rarely should a boy under 15 indulge in a race over 100 yards in length; that fast growing boys are especially liable to be injured by extreme exertion in

athletics, or, for that matter, in farm or other work. He urges the importance of prolonged rest between athletic events, of careful training for such competitions and of avoiding violent exercise for some time after a full meal.

Those who think the 440 yard dash might be permissible for a strong, vigorous boy believe it should be run only once in the events for a day, and only one other event permitted, which should involve only a brief effort.

It would seem, in view of these considerations: (1) That the *normal* heart is so amply endowed with muscular vigor that occasional extreme physical exertion seldom results in permanent damage, such as dilatation of the heart; (2) that contests demanding sustained effort to the point of physical exhaustion are unwise, especially during adolescence; (3) that when the heart has been impaired by previous disease or when the general physical condition is below par, as from anemia, malnutrition, or other departures from the normal, extreme exertion in athletics may result in serious damage.

Involvement of the heart is so common in infectious disorders, even when these are so mild as to attract little attention, that many young persons acquire heart trouble without the knowledge or suspicion of parents, family doctor or any one else. For this reason no young person should be permitted to indulge in any strenuous athletic exercise or contest until he has been carefully examined by a physician who is competent to determine whether there is present any abnormality of the heart.

The recently organized national and state associations for the prevention and relief of heart disease will have as their major activities the education of the laity as to the importance of avoiding infections, of guarding persons ill with infections against heart complications and of the imperative rule that persons whose hearts have been damaged must avoid all undue strain on heart and blood vessels. J. M. D.

WHAT POISONS KILL CHILDREN?

SEVENTY children among the policyholders of a large insurance company were victims of accidental poisoning in 1924. Young children furnished the largest group. In 57 of these cases the nature of the poison was ascertained. Strychnin, one of the deadliest poisons, caused 14 deaths; lye and other caustic alkalis, 6; fireworks, 5; vermin exterminators, which usually contain arsenic, 5; and kerosene and gasoline, 3.

The strychnin was taken in the form of cathartic pills by seven victims and in tonics by three victims. Strychnin is an ingredient of many "patent" or proprietary medicines but the law in most states does not require any caution label to be placed on the package.

It is unpardonable negligence on the part of any government to permit such deadly drugs to be dispensed in mixture for medicinal use without compelling the manufacturer to put a conspicuous warning label on every bottle or package. Parents should be repeatedly and emphatically warned to place every bottle, box, or package containing anything of a poisonous nature well out of reach of children. They should instruct the children, just as soon as they are old enough to comprehend the matter, in the importance of handling poisons with care, the dangers of poisons and especially the dangerous nature of many "patent" medicines. This should be taught in all schools as well as in the home.

Only when knowledge of these facts becomes universal and when the necessary precautions are taken in every household, will we be saved from the deplorable and unnecessary loss of life from accidental poisoning. J. M. D.

EDITORS COMMENT ON MISTAKES IN HEALTH NEWS

FROM time to time we have commented on the dangers that arise from misleading publicity in health matters, especially so far as concerns new remedies for incurable diseases and the prolonging of life. It is well to know that the attention of newspaper editors is being directed particularly to such matters at this time, as evidenced by an editorial in *The Editor and Publisher,* a leading periodical consulted by newspaper men.

It appears that a "desk man" wrote, under a one-column picture of a well known University of Wisconsin professor, the statement that the latter had been able to keep cells and tissue of the human body alive for an indefinite period by the use of a chemical solution, which would rejuvenate the tissues. The actual facts were that Professor Guyer of the biology department of this university had given a lecture on recent advances in biology, in which he had theorized to some extent on certain experiments that were of interest in biology, but that were of little immediate application to human disease.

The result of the misleading caption under the picture was a flood of letters which poured into the University of Wisconsin from helpless

cripples, persons suffering from incurable diseases, old men and women, all begging for pills or capsules of the suppositious chemical substance.

The Editor and Publisher cites some of these piteous appeals for help and concludes with the following warning to newspaper editors:

"Such is the character of the agonizing appeals, each based upon false hope created by a reckless cut-line writer, mind fixed on conclusive 'hot stuff,' rather than ordinary honest reporting of a phase of scientific experimentation and theorizing." M. F.

NEED COOPERATION FOR COMMUNITY HEALTH BETTERMENT

THE Child Health Demonstration at Mansfield, Ohio, recently celebrated the end of its third year of operation. Dr. Walter H. Brown, director of the demonstration, in a recent report emphasizes its most important accomplishments and the conditions that have made possible its successful conduct.

Striking evidence of the excellent health conditions that have been brought about in this community lies in the fact that during the past summer not a single baby died from summer sickness.

The movement has made available to every prospective mother in the county the best kind of prenatal service, conducted in cooperation with the practicing physician. The number of prenatal cases increased from 180 in 1922, the first year of the demonstration, to 482 cases in 1924. It is certain that a large percentage of deaths among mothers and infants can be prevented by such care. Adequate, skilful obstetrical care has been assured for rich and poor alike, through the family doctor, aided by the public health nurse. Infant welfare stations have provided careful physical examination of the babies (252 last year), and dietary and other hygienic instruction to the mothers. The vitally important preschool age has received attention, nearly 1,600 children of this age period having been cared for.

The physical examination of 5,000 school children, with the detection and correction of physical defects, has been made possible by cooperation of physicians and dentists. More than 1,000 examinations were made at the Mansfield General Hospital, and 104 children were operated upon there for the correction of physical defects. Results have convinced the majority of citizens of the great value of medical supervision of the school child.

Training in health habits has been made to occupy a more conspicuous part in the school curriculum and the teachers, now better trained in this field, have become health leaders in their communities.

Nutrition and diet have received their due share of attention both in homes and in schools.

Can Mansfield, or any similar community, afford to maintain a health organization that will do effective work? What is its annual cost as compared with that of other civic activities? Figures for Mansfield are:

For education	$18.64 per capita
For fire protection.....	1.90
For police protection....	1.34
For health.....	.22

None of the above essentials for community welfare is costing more than it should, and it is reasonable that under present conditions education, fire and police protection should require a larger amount than health. Such a wide disproportion, however, as shown in these figures, is not reasonable or economic. No modern community can secure proper health protection without the annual expenditure of from 50 to 75 cents per capita.

A similar, and in some respects a more striking, demonstration has been made in Owensboro, Kentucky.

Five years ago a full-time health officer was appointed for city and county. A fortunate selection of the incumbent was made by the Kentucky state board of health, and the board agreed to contribute annually a portion of the cost of the health work, and, by making it a demonstration center, to secure aid from the International Health Board. County and city have been called upon to spend not more than $6,000 in any one year to support a personnel consisting of the director, three nurses, a sanitary inspector and a laboratory technician. The detailed report of the health commissioner, which records an amazing amount of work by a limited personnel, affords convincing evidence that this service was worth at least $250,000 in 1924.

In what other phase of civic activity can this, or any other city, obtain so much for so little? Does it seem believable that the voters of any community, urban or rural, should be so blind to their own interests as to neglect the creation and adequate maintenance of an efficient health department? J. M. D.

It Pays to Wear A Smile!

BY JOHN T. LEMOS

You never can tell how much good will come from one or two happy smiles. Old Man Trouble always hates to see a smile coming down the street. Take a look at his picture and at the SMILES and BOBBY LAUGHTER and try to draw them.

This Healthy Town's
A happy place,
Where people wear
A smiling face.

They've found if you
Are glad and gay,
That all your troubles
Melt away.

Old TROUBLE runs
For many a mile,
If he bumps up
Against a smile

Prince SMILE is just
A jolly boy
Who's known for happiness
And joy

I know you'd like
His sister, too,
When she's around
You can't feel blue.

Now when they start
To dance and sing,
You feel as gay
As anything

And soon their cousin,
Bobby LAUGHTER,
Who follows them,
Comes tumbling after.

By then, the folks
In Healthy Town
Are singing songs
And dancing 'round.

And everyone
Is glad for miles,
Just from the power
Of two gay SMILES

BOOK REVIEWS

SMALLPOX AND VACCINATION. By Benjamin White, Ph.D. Pp. 90. Harvard University Press. 1924.

PROFESSOR WHITE has given in a few words the essential history of smallpox, its ravages in times past and its destructive activity at the present time. He gives a brief history of vaccination, the discovery and practice of which have saved more lives and prevented more sickness than any other gift to suffering humanity.

He makes it plain that vaccination is completely efficacious in preventing smallpox, and its application as practiced today is harmless. He conclusively answers all the objections raised by the antivaccinationists. He advocates compulsory vaccination and backs his stand with the best of reasons.

Every healthy baby should be vaccinated before six months of age, preferably at three months of age. A baby is worth saving before six months of age.

Everybody should read this little book. It is well written, costs but one dollar, and contains the essential facts about smallpox and vaccination. H. S.

SOCIAL CONTROL OF THE FEEBLEMINDED. By Stanley P. Davies, executive secretary, Committee on Mental Hygiene, New York State Charities Aid Association, 370 Seventh Ave., New York City.

THE book begins by making a striking presentation of psychological conditions as revealed by the World War. The author is optimistic and shows by means of historical development the great progress which has been made in dealing with the feebleminded since the early eighteen hundreds. He reviews Seguin's sensory and motor method of training, analyzes thoroughly the past and present views of heredity and eugenics, presents the alarmist attitude of 1915 together with efforts of the law to bring about sterilization and segregation and its relative failure.

Mr. Davies discusses the difference in institutional ideals brought about by Dr. Fernald at Waverley, Mass., changing the emphasis from custodial care to training and final restoration to society, and then considers the larger objects of Dr. Bernstein's colony plan in Rome, New York, i. e., to use the colonies to increase the capacity of state institutions so that more of the feebleminded may have the advantage of institutional training, to place as many as possible in a freer, more normal environment and to use the colony as a stepping stone to parole and discharge wherever possible.

In the chapter on the public school, he states that there are 5,500 children enrolled in special classes in New York City and there should be provision for 20,000, this provision to include the early detection and preschool education of mentally handicapped, very young children. He quotes Dr. Walter Fernald's axiom that "it is just as difficult for the feebleminded to unlearn as it is for them to learn in the first place, therefore it is the more important for them to be placed under the right kind of instruction as soon as the learning process begins." Employment and social career studies of the graduates of special classes are presented in the book; these are encouraging.

Finally the author regards the social status of the feebleminded from the behavioristic point of view as a mirror of the community as a whole whose responsibility they are, believing that society can use most of them in efficient labor and find a common level through the ideals of life.

The book is extremely well written and holds the interest throughout. J. E. Y.

THE ROMANCE OF THE HOLES IN BREAD. By I. K. Russell. First Edition. Cloth. Pp. 156. Eight illustrations. Price $1.50. Chemical Publishing Co. 1924.

AT LEAST part of the title of this book is indicative of its contents. It is a story, written in a romantic style, of the rise of microbiology. The greater part of the 156 pages deals with the life of Pasteur. In the latter sections David Starr Jordan, Max Henius and Dakin are eulogized.

Perhaps some persons may find inspiration in reading the volume, but certain glaring errors detract so much from the romantic theme that it is not possible to recommend it to the lay reader, although we sympathize with its fundamental purpose. Even a casual dip into a textbook of bacteriology would have shown the author that anthrax and puerperal fever are not caused by the same germ. The principle of keeping sewage out of a water supply is a good one but it is not true that the present day municipal water supply is operated on this basis. Filtration or chlorination or both has been found to be necessary. We are not acquainted with evidence to show that the typhoid fever in Chicago during 1892-3 was due largely to watered milk, and we should seriously question the statement that typhoid organisms were isolated from the milk.

Such statements detract from the confidence a reader should have in an author. There is no more fascinating story than that of Pasteur's life and the beginnings and rise of bacteriology. It could have been better told.

J. F. N.

ELEMENTARY ANATOMY AND PHYSIOLOGY FOR NURSES. By H. Clifford Barclay. Third edition. Pp. 411. Price, $3.50. William Wood and Company, New York.

THIS is a good presentation of elementary anatomy and physiology. Any interested person who has not been trained in these subjects will find here an interesting description and discussion of the structure and function of the human body.

The text is arranged differently than in the other standard textbooks. The anatomy is presented in the first eighteen chapters, the physiology in the next ten chapters, and there is a chapter on each of the subjects indicated above. The author has developed the subject from a biological point of view and has very fittingly indicated the applications to medicine, surgery, pathology and psychology.

The principal adverse criticism is the failure of the author to discuss the reproductive system. This omission weakens the chapters on embryology and emotions and makes the text incomplete. T. T. J.

HEALTH NEWS AND VIEWS

WHO SAYS BOYS DON'T LIKE VITAMINS?

U. S. Department of Agriculture

The bureau of home economics of the U. S. department of agriculture finds that, without urging, a growing boy will tuck away a surprising number of graham bread, lettuce and sliced tomato sandwiches and glasses of orange juice.

RAILROAD SENDS EMPLOYEES TO VENEREAL DISEASE LECTURE

All male employees of the Brunswick division of the Atlanta, Birmingham & Atlantic railway company were recently called to a meeting in Fitzgerald, Georgia, to hear a lecture on venereal disease.

The company provided free transportation for all employees. The auditorium with a seating capacity of 1,200 was filled, and 300 were turned away.

The meeting was arranged by the Georgia state board of health and the U. S. Public Health Service. This is one of a number of similar meetings being held as part of the venereal disease control activities of the Georgia board of health. They seek to enlighten the general public on the dangers of venereal diseases, how their spread may be controlled, what they cost both in health and money, and how preventive measures may be effectively employed.

PREVENTING SUMMER DIARRHEA

August is the month in which the greatest number of babies die from diarrhea. The heat affects the baby directly and it also makes difficult the keeping of milk for his consumption.

Severe diarrhea is not common among children who are breast-fed, but the reverse is true in the case of bottle-fed babies. Diarrhea and digestive disturbances in general are far more frequent among babies who are fed upon raw or condensed milk than among those who get fresh, pasteurized milk.

Babies that live in the country and those that get out of doors much of the time are not so susceptible to diarrhea. The stuffy air of apartments and tenements is conducive to upsets of digestion.

When the digestive processes are slowed down by heat, the infant's system is more liable to infections, and numerous diseases may develop, such as measles, diphtheria and scarlet fever.

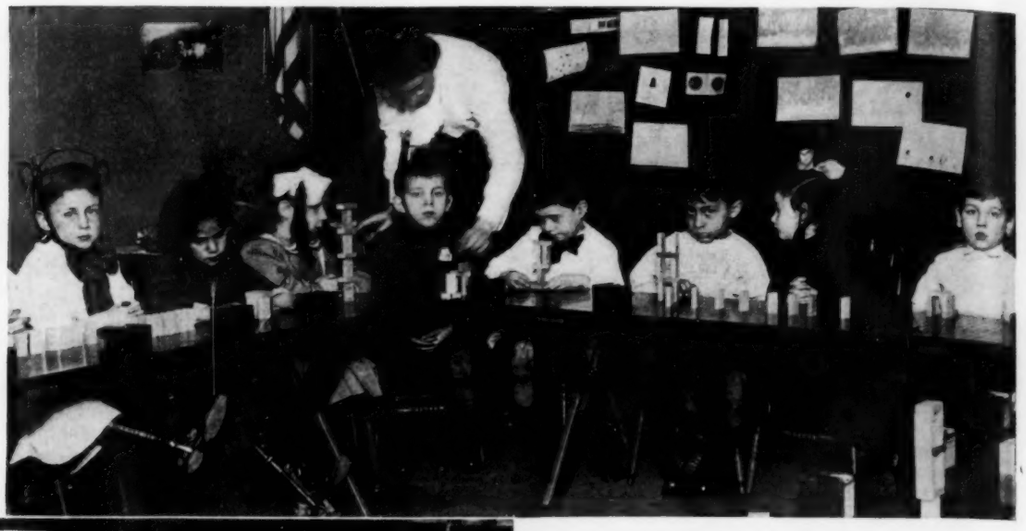
The following rules for mothers are given by the Louisiana state board of health:

1. Nurse your baby. Do not wean him until your doctor says so. If he is bottle fed, keep the food clean, on ice and covered from flies. Unripe or too ripe fruit is very bad for young children, and ice cream is not always a good food for them. Do not allow them to eat between meals, and do not worry if they eat less in summer.
2. Give the baby cool boiled water. Do not give it for forty minutes before feeding.
3. Give a bath once a day. A sponge bath several times a day in the very hot weather will help to keep the baby comfortable.
4. White clothes are best for the baby; a shirt and diaper are enough.
5. Have the baby sleep out of doors, protected from the sun and heat, and from flies and mosquitoes.
6. At the first symptom of diarrhea send for the doctor. Cool boiled water may be given, but no food should be given until the doctor is consulted. The doctor can check a simple diarrhea, but if you wait it may become very serious.

TO PREVENT DROWNINGS

The National Safety Council is conducting a campaign this summer to prevent drownings, which last year in the United States reached the number of 6,500. The Council gives the following rules for swimmers:

1. Don't swim if you have heart trouble.
2. Never go in swimming alone.
3. Don't swim if overheated or tired.
4. Don't swim on a full stomach. Wait at least two hours after eating.
5. Dive only where you have accurate knowledge of the depth of the water.
6. Don't swim until exhausted. Rest on your back and then swim ashore.
7. Don't struggle if caught in a swift current or undertow. The force of the current will bring you to the surface; then work in toward shore.
8. Learn Red Cross life saving and resuscitation methods. Be capable of saving others as well as yourself.



KINDERGARTEN FOR CRIPPLES

Crutches, braces and casts are forgotten in the pleasant pursuit of building block houses at this kindergarten class for crippled children. There are some sturdy young minds in these crippled bodies and they are responding readily to their first schooling under the supervision of the Association for the Aid of Crippled Children in New York.

DON'T BUY HERE

Unfortunately in some cities there still exist a number of insanitary soda fountains and candy stands such as this widely patronized booth in New York's east side.

NOT MERE ORNAMENTS

The picturesque windmills of Holland are not mere ornaments. Many of them furnish industrial power continually. Here you see four mills on the North Canal at Zaandyk.

Photos by Ewing Galloway

Fotograms

SCOUTS TAKE SUNNING

While they eat their picnic lunch these Boy Scouts are giving themselves a sun bath. They are wiser than many grown-ups in recognizing the health value of the sun.

HAPPY DOWN TO HIS TOES

Baby Dukhobortsi of Western Canada is being brought up on bread and milk, and he seems to be enjoying it greatly. Even his toes express satisfaction. The Dukhobortsi are vegetarians, and they cannot be accused of being weaklings.

Edith S. Watson

United

FIVE GRANDMOTHERS IN ONE GYM CLASS

Grandma can swing an Indian club as well as her granddaughter. In this one gymnasium class at the Municipal Gymnasium of Boston are five grandmothers; their ages are 71, 69, 53, 52 and 52.

APPROVES PUSHCART FRUITS AND VEGETABLES, BUT NOT FISH

Buy fruits and vegetables that can be washed or peeled from pushcarts if you care to, but do not patronize the pushcart vender for fish, candies, breadstuffs and dried fruits.

This is the advice of the U. S. department of agriculture after making a survey of pushcart markets in New York City, in cooperation with the port of New York authority.

Most of the fruits and vegetables sold by street pedlers are wholesome and suitable for human consumption, says the department of agriculture, but the sale of fish as it is being carried on is a menace to public health and should be prohibited. Water and sewerage connections are necessary where fish are sold in order to prevent the accumulation of refuse and to control flies.

Fruits and vegetables purchased by the pedlers are the small sizes, lower grades and the deteriorated products but, after reconditioning, the products offered for sale were found to be of wholesome quality.

Pedlers' prices were found to be the lowest in the city, a considerable saving being effected through low cost of operation, small initial investment and elimination of jobbers' margin. Saving is also brought about through salvaging poor conditioned produce.

The survey brought out the fact that 1,500,000 persons in New York purchased all or part of their fruits and vegetables, dried fruits, nuts and cheese from pushcart pedlers, spending fully $35,000,000 a year for fruits and vegetables alone. This vast quantity represents 11 per cent. of the total amount of fresh products consumed in the city. A million dollars is spent for fish bought from pushcarts.

NIGHT WORKERS MUST TAKE SPECIAL CARE OF HEALTH

Persons who work at night must take special care of themselves to avoid breakdown, asserted Dr. C. R. Hervey of the New York state department of health in a recent address.

Newspaper men, bakers, dairymen, factory and mill hands, miners, printers, railroad operatives, policemen, firemen and all the great class of night workers are subject to special dangers. They live under abnormal conditions and often are subject to influences that undermine their physical condition and pave the way for diseases not directly attributable to the particular occupation involved.

Most night workers gradually weaken under the strain and sooner or later return to day work. Whether they can continue indefinitely in night work depends upon their individual adaptability and the care they take of themselves.

Regular hours of rest are difficult for the night worker to obtain. He should get the same amount of sleep as the day worker and he should have a period of relaxation in the morning before going to bed to correspond to the evening of the day worker.

Sleeping rooms are often ill adapted for restful sleep during the day time. The night worker should occupy a room as far away from the noise of the street as possible. In the summer, if it is too hot to have the shades lowered, use can be made of portable screens which will help to shut out the light and will not cut off the ventilation.

Broken sleep will disturb the digestion and will complicate his nutrition problem, already great, by reason of his eating his meals at unusual hours.

Dr. Hervey suggests that the night worker see first that he gets his full amount of sleep and then plan the rest of his daily life on a parallel with that of the customary routine of the day worker.

78,000 CHILD MIGRANTS IN CANADA

Within the last fifty years, some 78,000 homeless children from Great Britain have been brought to Canada under what is known as the child migration and settlement system. The British Oversea Settlement Committee has recently concluded an investigation of these child settlers.

The children are sent to Canada under the auspices of certain philanthropic societies in the United Kingdom. The British government and the Canadian government share equally their expenses for transportation, reception and after-care.

Under reliable conductors the children are brought to Canada in groups, which usually have separate and distinct accommodation on the steamer. The society makes an agreement with the persons who are to take the child in their home as to whether he is to be legally adopted, to be boarded out for cash payment, or to be boarded out without cash payment. Few of them are legally adopted.

Children over 14 are generally placed out under a wage agreement, a periodical settlement being made between the employer and the society. After deducting money for clothing and pocket money, the rest is placed in a trust fund to the child's credit in the bank.

The homes to which the children are sent are inspected regularly by the government.

The system met the approval of the Oversea Settlement Committee, although it made a number of suggestions for improvement.

SATURDAY MORNING MOVIES FOR CHILDREN

In thirty-two cities this summer, certain motion picture theaters are showing special performances on Saturday mornings for boys and girls. The admission fee is 10 cents.

Each program consists of eight reels, divided up into a five reel feature, a two reel comedy, and a one reel scenic or industrial film. The programs are especially selected for children and are said to be wholesome in content.

These special performances, the producers who have arranged the juvenile films believe, will curb the tendency of young boys and girls to attend other pictures which are now, and probably always will be, for adult viewing.

HIGH SCHOOL PROVISIONS FOR RECREATION

A study of facilities for health and recreation of high schools has recently been completed by the North Central Association of Colleges and Secondary Schools. Of the 1,571 public high schools studied, these facilities were found:

Auditoriums were present in 84.5 per cent. of the schools; gymnasiums, 82.6 per cent.; swimming pools, 10.7 per cent.; shower baths, 83.7 per cent.; health clinic rooms, 26.1 per cent.; recreation rooms, 23.1 per cent.; club or activities rooms, 18.6 per cent.; music rooms, 59.5 per cent.; boy or girl scout rooms, 9.4 per cent.; adequate athletic fields or playgrounds, 75.4 per cent.

CHILDREN AID IN KEEPING CITY CLEAN

The New York street cleaning department has organized juvenile leagues among the school children to enlist their interest in keeping the city clean. The work began on the Lower East Side and extended until the leagues now number 450, with 30,000 children wearing merit badges which they have earned in promoting the campaign for clean streets.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnoses in individual cases will not be attempted nor treatment prescribed. Answers to questions relating to beauty will be found in the "Healthful Beauty" department of this magazine.

Varicose Veins

To the Editor:—A young lady I know is contemplating marriage and is somewhat worried about taking such a step because of the fact that she has varicose veins in both limbs, starting from the hips down to the ankles. They do not bother her much. However, during her menstruation period they become swollen, but to no great extent. She is also a free bleeder. Do you think she should have these veins removed, or is there any treatment she should take before entering married life?

J. S., Nebraska.

Answer.—Varicose veins of the legs are not a contraindication to marriage or pregnancy, but in case of pregnancy the amount of discomfort is usually increased. It would seem that the young lady referred to should have a careful medical examination before marriage and leave the question of treatment to a competent medical adviser.

Polluted Streams

To the Editor:—We live near a creek. About a mile up the creek several toilets and a barn drain into it. There are also dead animals in it. It has a deep gravel bed. Does running over gravel purify it enough for swimming?

T. L., Tennessee.

Answer.—Swimming or bathing in the creek is unsafe, as well as insanitary. The toilets and drainage from the barn add multitudes of germs to the water. Some of these germs may cause a very troublesome infection if they get into the mouth or the nose. The middle ear may become inflamed from the same cause, leading to severe illness.

There is a possibility that the toilets may be used by persons who harbor typhoid germs. These might readily cause typhoid fever if swallowed by some one bathing in the water that receives the drainage of these toilets.

Running water is not purified to any extent by simply running *over* gravel. It may, however, be purified to a greater or lesser degree, depending upon conditions, if it passes slowly *through* deep layers of sand. However, the conditions mentioned in the question are unfavorable for purification.

Arthritis

To the Editor:—Please tell me the real value of the treatment by foreign protein (especially milk) injections in arthritis. Is there any danger to life? If the treatments are of value, would a man 70 years, in splendid general condition, be too old to take them? Is diathermy of any value? Is there any treatment of any benefit?

A. R. Q., Kentucky.

Answer.—Foreign protein is of value in treating many forms of acute infection. It has considerable value in acute arthritis but is of no value in chronic arthritis unless there is evidence of more or less acute inflammation in the joints.

In some of these cases the patient will receive considerable relief of the acute symptoms after the use of foreign protein, as there is a temperature reaction following it and occasionally a chill. Though the chill rarely occurs when milk is used, the treatment is not entirely free from danger and should not as a rule be used in elderly persons in whom the arteries are not in good condition or if there is a high blood pressure.

Diathermy will often give temporary relief and should be given a trial. There is nothing in the way of diet that is of proved value, although it is advised that such patients avoid excessive amounts of sugar. Rarely do we see advanced cases benefited by any special form of treatment.

Salicylate of soda taken in 5 grain doses three or four times a day, while not curative, gives the patient a considerable degree of relief.

Morning Sickness

To the Editor:—I am an expectant mother, starting on my third month of pregnancy. I have three other children, 7, 6 and 3 years old, and with each of them, as I am this time also, I was very wretched. I am sick at all times of the day and can eat so little that I feel very weak. My doctor has tried different things but nothing seems to give me any relief. I have taken corpus lutum capsules every three hours and one of the three bromides after each meal. Now the doctor is going to try injecting the liquid corpus luteum in my veins. Could you suggest something which would be of benefit to me?

G. W. N., Illinois.

Answer.—Morning sickness, or vomiting of pregnancy, occurs to some degree in nearly one half of all pregnancies; probably one third of these cases are attended by much distress.

The disturbance appears most often in first pregnancies and is said to be more common in the United States and France than elsewhere.

It begins usually during the first month and lasts almost to the time when quickening is felt. It then ceases entirely or, if it has been neglected, the conditions may grow worse and pass over more or less rapidly into one of the severer types of the disease.

The more serious forms of the trouble fortunately do not occur more than once in 700 or 800 cases, and even these will commonly yield to early and well considered management.

Much time and talent have been expended in trying to find the cause of this complication. The most common hypothesis assumes that there are certain errors in the metabolism of the body (chemical changes going on) whereby an unusual amount of waste products is developed or an insufficient quantity is excreted from the system. By the latest and most plausible thesis it is maintained that this waste matter, toxin or poison, produces an acidosis, or diminished alkalinity of the blood.

According to this idea, the liver, which is the principal organ for the conversion of sugar, is drawn upon heavily by the growing placenta which is storing up this sugar for the future use of the child. As soon as the placenta is completely formed, say at the fourteenth or sixteenth week of pregnancy, an equilibrium is established between the placenta and the maternal liver. The liver again becomes adequate and the disturbance ceases.

Meanwhile the diminished intake of food and especially the interference with sugar metabolism, as well

as the increased demand for sugar, all combine to bring about the acidosis with its attendant evils.

The general unsteadiness of the system under these circumstances may be easily upset at any time by some preexistent local irritation. Thus we find the onset of vomiting may be provoked or its continuance prolonged or intensified by focal infections in the teeth, tonsils, appendix, stomach, gallbladder or intestines, as well as by pelvic inflammations, tumors or uterine displacements. A woman with a tense nervous system is easily and quickly disturbed by small irritations.

In the treatment probably every substance known to man has been used in some way or at some time.

Hygienic care is most important in every case but especially in the severer types. The patient should have complete isolation and quiet. A hospital is best. The stomach can be rested by rectal feeding if necessary. The pulse, blood pressure and urine must be watched carefully and all focal infections and irritations must be removed. Ice bags to the spine for an hour or so a day will often help, as will mustard plasters over the stomach. The diet must be studied in each instance and the carbohydrates (starches and sugars) greatly increased. Sugar enemas, small enough to be retained, will often be of value and the meals can be given oftener and in smaller amounts.

Nearly all cases respond quickly and permanently to appropriate treatment. The most gratifying success in many cases has attended the use of corpus luteum extract and glucose solutions injected into the veins and accompanied when necessary by insulin or solutions of sodium bicarbonate. Such remedies can be safely used only under the care, supervision and direction of a physician.

Drugs by mouth are of little or no value, except the bromides in the presence of a supersensitive nervous system.

Scarlet Fever

To the Editor:—Last winter my little daughter was ill; her disease was diagnosed as scarlet fever and we were quarantined. She had every symptom, the doctor said, until she began to get better, when she did not peel off in the slightest degree. Every mother I have asked who has nursed a case of scarlet fever says that her child peeled or scaled. The doctor still thinks my daughter had scarlet fever. Her not peeling off he attributes to good nursing, for she had a bath daily with a strong antiseptic soap and was rubbed almost hourly with a soothing lotion. I would surely like to know if you think she had scarlet fever.

D. F. G., Pennsylvania.

Answer.—It is quite possible for a child to have scarlet fever, even if no peeling is observed. Peeling, or desquamation, almost always occurs in scarlet fever, but not invariably.

Syphilis

To the Editor:—1. Can a man have syphilis without its showing in the blood? I have taken two Wassermann blood tests and both negative. 2. What is syphilis of the nervous system? 3. Is there any disease of the teeth or gums that would cause symptoms similar to syphilis.

O. B., California.

Answer.—1. It is quite possible for a person to have syphilis and yet his Wassermann test prove to be negative. Such a condition is present in early syphilis, that is, for variable periods of time following the infection and not infrequently in cases of long duration, many of which have not had sufficient treatment. Repeated Wassermann tests with negative results for a period of several years in the absence of all symptoms of the disease is good evidence that the disorder has been cured.

2. Syphilis involves the central and peripheral nervous system as well as other parts of the body and produces different symptoms, which vary according to the part involved.

3. Syphilis may cause a number of types of lesions in the mouth. It may produce an inflammation of the gums very similar to an ordinary pyorrhea, with some loosening of the teeth. Occasionally the primary lesion of syphilis occurs on the gums and resembles to some extent an ordinary sore spot.

Computing Date of Confinement

To the Editor:—I do not understand a few points on the subject of childbirth, especially how to compute the date of the birth of a child. As I show some signs of being pregnant, I would like to know why, in computing the date of birth, you take the date of the onset of the last period and add seven days and count back three months? Why not any other number of days? I am sure it would make a big difference about the date of birth if it was conceived just before or at any time between the periods.

E. C., Virginia.

Answer.—The subject of human gestation or childbearing has as yet many questions unsettled. For instance, the duration of pregnancy is about 275 days if conception occurred in the ovum of the last menstrual period. If computed from the expected beginning of the first menstrual period which was missed, it is reckoned as 252 days. Labor usually begins 270 days after the date of a single fruitful intercourse. On the other hand, the French law recognizes the legitimacy of a babe born as long as 302 days after the death of the husband.

Conception does not necessarily occur exactly on the day of fruitful intercourse. The egg may be fertilized a week or ten days later, possibly even longer. Conception also may occur during lactation or nursing, when the menstrual periods have not returned. It may occur in young girls before the menses are established, or (rarely) in women after the menopause, or change of life.

With these facts in mind it can be seen that considerable latitude is necessary in the estimation of the date of confinement. Ordinarily, seven days must be deducted from the assumed duration of pregnancy to allow for the average duration of the last menstrual period, but the result is only approximate. There is always a possible error of three weeks in the calculation depending on whether the egg of the last period present or the egg of the first period missed was fertilized.

The quickening (the date when the mother first feels the movement of the infant in the womb) is a check on the date for the confinement. It is generally believed that when quickening is felt the pregnancy is about seventeen weeks old, and the physician counts forward twenty-two weeks to arrive at the expected date. This assumes that the pregnancy lasts 273 days.

The term of human gestation is still further obscured by our uncertainty as to the cause of labor. Whether the pains start as a result of one or of many concurrent influences, it is not known. The event may be due to the maturity of the egg, to irritability of the uterus at the tenth menstrual epoch, to an increased sensitiveness of the organ, to its overdistention beyond the limit of tolerance, or to a degeneration of the placenta.

Labor may be caused by some entirely different factor such as might be connected with the endocrine glands, but there are so many exceptions to each hypothesis as to make all of them unsatisfactory. At present it seems that labor comes on less by rule than by accident. The best way to determine the time when labor ought to start is by the routine measure-

ment of the uterus and of the child in the uterus during the later weeks of pregnancy. In this way it can be discovered when the child reaches maturity. A mature child should be delivered within a reasonable time after this condition is attained. By regularity of mensuration such information is obtained as will assure the patient and her attendants whether she is carrying an "overtime child."

The whole purpose of gestation is the production of a mature child and when this knowledge is assured the management of the case can be much simplified. Since at present it is not known when conception occurs, the exact length of human gestation, or the reasons for the onset of labor, it is highly important to use mensuration and all other means which will aid the physician to form an intelligent and comprehensive understanding of any given case. Otherwise the whole process is left to chance.

Eyestrain in Office Work

To the Editor:—We are undertaking a comprehensive study of the various factors in connection with the use of accounting forms and records. One of the most important points for consideration is the degree of eyestrain incident to the use of various colors of paper and cards. It has occurred to us that possibly your association has at some time made a study of this matter. If that has been done, may we ask you to advise us of your conclusion? H. & S., New York.

Answer.—The question of color of paper for records and cards cannot be considered entirely apart from the character of the light in which they are to be used and the color of the ink used on them. Unless the light is very strong (direct sunlight or something of the kind), the strongest possible contrast should be secured. This will depend partly on the percentage of reflection from the surface of the paper.

In general, white paper with black ink, or white paper with a tint of yellow, will be most agreeable to the eyes and most generally serviceable. Dark blue and dark purple ink stand out best on such paper. For ink verging on red, the paper may have a faint blue tint. For green ink the tint may approach orange. In the *Ophthalmic Record* for February, 1913, a paper by Black and Vaughn is printed on four different tints of paper; a study of these tints shows the superiority of a paper tinted slightly yellow as a background for black ink.

Nephritis

To the Editor:—I would like to have you give me a little information regarding nephritis. What is the cause, how does it affect a patient, and how may it be cured? Would one having it be safe to become a mother without danger to one's life or young? J. S., Wisconsin.

Answer.—Nephritis means inflammation of the kidneys, but the name is more often given to a general condition associated with some such inflammation. There are usually other organs, often several, that are injured as well as the kidneys, such as the arteries, liver or nervous system.

The cause is almost always a poison or toxin formed inside the body from infections such as scarlet fever, diphtheria, tonsillitis, infection of the nasal sinuses, or from toxin present in other diseases such as diabetes, or developed during pregnancy. External poisons such as mercury, lead, arsenic or drug poisons in excessive doses, and possibly material absorbed from the bowels may sometimes be causes. The trouble often seems to start from chilling, which gives the infection a chance to disturb the normal resistance of the body cells.

The symptoms depend on the degree of inflammation in the kidneys as compared to other parts of the body. There is albumin in the urine and often casts with blood if the nephritis is severe or acute.

The ankles, feet, eyelids and face may swell. There is usually a general feeling of weakness and some headaches. The blood pressure is high in the later stages, especially if the poison is one that irritates the small arteries. The total amount of urine for twenty-four hours is usually small, but night urination is frequent.

The cure depends on the correction of all possible sources of toxin production, such as removal of infected tonsils and teeth, drainage of infected sinuses and gallbladder, and also on the prevention of chilling and taking colds, and a diet of fruits, vegetables, and cereals, with some protein. Meat is now usually allowed, but not red meat or dark meats. Dairy products are usually permitted.

Nephritis due to pregnancy is likely to recur in subsequent pregnancies. In nephritis from other causes, everything possible should be done to improve the condition before the patient becomes pregnant, and even then the outlook is not good. Many women who have nephritis of mild degree, such as that from an attack of scarlet fever in childhood, become pregnant and give birth to children with no apparent aggravation of the nephritis. Many others, however, have serious difficulty.

The question as to whether a woman with previous or existing nephritis can safely become pregnant should be decided only after careful analysis of the urine, blood pressure reading, perhaps repeated several times, and if possible, tests for kidney function.

Bathing and Menstruation

To the Editor:—I have a daughter, 27 years old, who insists upon taking a tub bath the second day of her menstruation period. She has done this for about one year and although I can see no ill effects to date, yet I am of the impression it is not good for her. Please tell me if this practice is harmful or not. S. E. G., South Dakota.

Answer.—It has been almost the universal belief that bathing at the menstrual period is injurious and the custom has been to avoid bathing. In recent years, however, some of the authorities on diseases and conditions of women, of large experience, have come to the conclusion that, with proper precautions, bathing is not harmful in many cases, but may be comforting and sanitary.

Some physicians advise nervous, active women to be more quiet during the menstrual period, and to these a warm bath is quieting and helpful. On the other hand, women of the relaxed, flabby type often get on better by continuing their usual activities during menstruation, and also their cool shower if they are in the habit of taking one. Bathing in *cold* water is always to be avoided at such time. Swimming in cold water during the menstrual period has sometimes caused serious trouble.

In cases in which the taking of baths of any sort or temperature seems to alter in any way the course of menstruation, it would be wise to consult a physician about the matter and to follow his advice.

Soaps

To the Editor:—Will you suggest a soap that is not too drying for use in washing the hair? 2. Is once a week too often to wash moderately oily bobbed hair? It always looks much nicer when washed often. J. W., South Dakota.

Answer.—Liquefied olive oil castle soap is very good for washing the hair.

2. One shampoo weekly is not too much for oily bobbed hair. A weekly shampoo is a good habit to acquire.

CURRENT HEALTH ITEMS

"THE TRANSPARENT MAN"

Hundreds of Americans traveling in Europe are visitors at the Hygienic Exposition in Vienna. One part of the exposition deals with man, another with the new household and a third with hygiene.

One of the most interesting exhibits and the most popular with the general public is what is known as "The Transparent Man." The Vienna correspondent of *The Journal* of the American Medical Association describes the exhibit.

The visitor enters a dark room and there he looks into the human body. All of the organs, through a peculiar process, have been made transparent. The exhibits are placed between the visitor and the light and he sees them as one looks at an x-ray plate.

In this room one can follow the development of the child before birth from the twelfth day on, week by week, until birth. He sees the development of the embryonic skeleton, the brain and the viscera. Farther on in the exhibit he sees the same organs in the adult.

Motion pictures and lectures are shown to visitors on a number of important health topics; among them the production of the voice, women in the professions, the importance of a healthy skin, the hygienic aspects of married life, the birth of the human being, the care of infants, goiter and how to combat it, first aid for accidents, school hygiene in large cities and gymnastics for cripples.

SUNBATHS FOR BABIES

Autumn and winter babies are much more apt to develop severe rickets than those born in summer and spring because they get less of the outdoor sun. However, they may be given long indoor sunbaths by placing them in front of a sunny, open window where their faces, hands, arms and legs can be exposed daily for increasing periods.

This is Dr. Martha M. Eliot's advice to mothers in an article on "Sunlight for Babies" in the June *Child Health Bulletin.*

"The beneficial effect of sunlight is not obtained unless the rays reach the child's skin directly," says Dr. Eliot. "The interposition of much clothing or window glass keeps out the ultra-violet rays. It is only when the skin begins to be tanned that any benefit may be expected."

In the north temperate zone, Dr. Eliot declares, it is usually possible for normal babies to begin to have outdoor sunbaths by the middle of March or the first of April, provided the place selected for the sunbath is protected from the wind.

Sunbaths should begin when the baby is about three or four weeks old. With the first sunny day of early spring the baby may be put in the direct sunlight with both the hood of the carriage and the baby's cap pushed well back so that the sun will shine directly on the cheeks. The baby may be turned first on one side and then on the other so that both cheeks may be exposed and yet the eyes will be kept away from the direct rays of the sun.

Sunlight will prevent or cure rickets and it will aid in the prevention of many of the diseases of childhood, it is now known.

THREE AGES OF HEART DISEASE

Probably 2 per cent. of the entire population of the United States is afflicted with heart disease and the total number of cases has been placed at well over 2,000,000. So says Dr. William St. Lawrence of the New York Heart Association, who writes for the July *Woman's World* an article on "The Prevention of Heart Disease."

Dr. St. Lawrence says that at different ages the causes and types of heart disease are different. He names three age periods in any one of which the causes and types are likely to be uniform.

The heart disease that affects persons from birth to 35 years is caused by a germ, he declares. This germ is believed to enter the body most commonly through bad teeth and diseased tonsils. When this germ grows in the joints, it produces inflammatory rheumatism. When it grows in the brain, St. Vitus dance or chorea results. When the bones are involved, what is commonly called "growing pains" occurs. If the tonsils are infected, there is a great tendency to frequent sore throat. When the heart is attacked, heart disease is produced.

When a person is between 36 and 45 years, he comes into the age group of the second period. Most of the cases of heart disease at this time are due to the rheumatic germ. Stiffness and dull, aching pains in the joints and bones are felt, especially in damp weather. Another cause of heart disease occurring at this period is syphilis. This disease rarely affects the heart until a person is 35 years old, regardless of how long he has been infected.

The third period extends from the age of 46 until death. The causes and types of heart disease occurring at this time are less clearly defined. The organs of the body begin to show the results of improper living, with overeating, too little sleep and insufficient exercise. Overwork and overworry without mental relaxation show their effects. The immoderate use of alcohol, tobacco, tea and coffee has a baneful influence on certain persons.

Periodic medical examinations are a big factor in preventing heart disease, Dr. St. Lawrence believes.

IS KINDERGARTEN WORTH WHILE?

"How the Kindergarten Educates" is the title of a recent U. S. bureau of education bulletin by Luella A. Palmer and Mary G. Waite.

These writers believe that the kindergarten not only helps the child develop during the preschool period but lays the foundation for future health, happiness and success. The kindergarten helps the child to keep well, form good moral habits, gain general knowledge which may be used in everyday living, gain certain practical skills, and learn good ways of spending leisure time.

The kindergarten lays a foundation for health, say the Misses Palmer and Waite, by providing good hygienic conditions, cleanliness, fresh air and sunshine, luncheons of milk and crackers, space for free activity, gardens for digging and opportunities for quiet and rest.